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Aug 19, 1965

MISSION COMMENTARY TRANSCRIPT

Tape 1, Page 1

Our problem is centered around a liquid hydrogen sphere that contains the liquid hydrogen fuel for the fuel cell system in the Gemini V spacecraft. Throughout last evening and here this morning during the early phases of this countdown we have had difficulty attempting to fill this tank, this very vital tank, to complete the 8-day mission. We have had difficulty filling this tank to its capacity. Our attempt is actually to overfill the tank prior to lift-off. We attempt to load it to 104 percent of its capacity. That is, we have a certain capacity within this liquid hydrogen sphere. We deliberately overfill, because we will have boil-off of the liquid hydrogen which is maintained at a temperature of -423° . In our efforts to correct this boiloff situation, we now have changed trailers at Launch Complex 19. These trailers contain the liquid hydrogen fuel that is fed through the ground support equipment system to the sphere which is located in the spacecraft. We have changed these trailers at the present time, we are in the process of hooking up a new one. The reason is to get more volume into this system. We want the trailer that has a large amount of volume of hydrogen so that we can increase our pressure along the lines and buildup the amount of liquid hydrogen we want. This difficulty is still being looked at. We will have a further report on it shortly. The count is at 300 minutes and holding. As far as Astronauts Gordon Cooper and Pete Conrad are concerned the countdown called for them to be awakened at T-270 minutes in the count. It is our understanding at the present that both astronauts are still sleeping. Thirty minutes

after we pick up the count, that is at T-270, the astronauts will be awakened to start their preparations for the Gemini V flight. This is Gemini Launch Control at Cape Kennedy. We are holding at T-300 minutes.

END OF TAPE

This is Gemini mission control at the Cape. Our countdown on the Gemini V mission remains at T minus 300 minutes and holding. We are still five hours from the launch and the length of the hold has not been exactly determined at this time. Our problem centers around attempting to bring fuel into a hydrogen sphere that powers the fuel cell system within the Gemini V spacecraft. At the present time, we are attempting to switch a trailer in the ground support equipment that provides the hydrogen fuel to the system. Once we have hooked up with a new trailer in order to get more volume, we will then begin again to feed the liquid hydrogen into this hydrogen fuel sphere within the spacecraft. Once again, when we are ready and we attempt to do this, we will attempt to overfill the sphere, that is, go 4 percent higher than the quantity we want. This reason for this is we have a condition called boiloff with any type of cryogenic fuel, that is, a fuel that is maintained in liquid form at an extremely low temperature. We have severe heating problems under conditions like this, where liquid hydrogen, which is maintained at -423° , that's 420° below zero, quite obviously can be effected by heat. So we attempt to overfill this particular sphere and any other systems where we do use liquid hydrogen within the spacecraft. We attempt to overfill it so that we will have a boiloff system, resulting in launch time having a complete 100 percent capacity. We overfill, it will boil off a little bit, we will maintain it in this manner, keeping a close eye on it through the terminal phases of the countdown, resulting in 100 percent capacity at lift-off. Well, obviously, we are going to watch this very closely. We are aiming

for an eight-day mission on the Gemini V flight, and we want to insure that we are completely fueled at lift-off to insure that both astronauts Gordon Cooper and Pete Conrad will have a full system with them when they go. We are currently at 300 minutes and holding. We are expecting to get a report shortly on the status of the count, and when we expect to be able to resume. Earlier last night, a launch vehicle fueling began at 10:00 P.M. and lasted until about 1:30 in the morning. We had detected just prior to launch vehicle tanking that we might have a particular problem with this boiloff situation in the fuel cell system. At that time, however, we were not able to get into the spacecraft while the two stages of the Titan II launch vehicle were being fueled. We came back to look at our problem about 2 o'clock this morning and it was determined to go into initial hold in the countdown at 3:00 A.M. We are still holding at the present time, T minus 300 minutes and holding. We just received a report from the astronauts' quarters: Gordon Cooper and Pete Conrad are still sound asleep at this time; the intent is to awaken them 30 minutes after we pick up the countdown, that is, at 270 minutes in the countdown the prime pilot and the two prime pilots for the flight will be awakened. This is Gemini launch control at Cape Kennedy, holding at T minus 300 minutes.

This is Gemini Launch Control at Cape Kennedy. Our count remains at T-300 minutes and holding. We have just received a report from the blockhouse that the hold is expected to last an additional 30 minutes from this time. The hold was called at approximately 6:15 -- the continuation of the hold was called at approximately 6:15 a.m. this morning. This is Gemini Launch Control at the Cape. T-300 minutes and holding. The hold is expected to last an additional 30 minutes from this time.

END OF TAPE

This is Gemini launch control at Cape Kennedy. We are still holding on the Gemini V mission at T minus 300 minutes and holding. We were informed from the block house some 5 minutes ago that the hold is expected to last an additional 30 minutes from that time, which, on an estimate, would give us a pickup time, if all goes well, of 6:45 A.M. Eastern Standard Time. Our problem has centered around, as we reported earlier, on providing some liquid hydrogen fuel to a tanking system within the fuel cell, that is the power system in the Gemini V spacecraft. We have switched trailers in our automatic ground support equipment in order to get a trailer containing liquid hydrogen with a larger volume to insure that we will get a proper feed of the liquid hydrogen fuel into the fuel cell fuel system, this is the liquid hydrogen that does power the fuel cell system along with the lique oxygen. Our present time, we are still holding at T minus 300, command pilot Gordon Cooper and pilot Pete Conrad still sound asleep in the astronauts' quarters at the Kennedy Space Center on Merritt Island. This is Gemini launch control. We are T minus 300 minutes and holding.

This is Gemini Launch Control at Cape Kennedy. Our count remains on the Gemini V mission at T-300 minutes and holding, T-300 and holding. We are still looking into our problem of loading liquid hydrogen fuel into the fuel cell system aboard the Gemini V spacecraft. We have now switched the trailers we referred to earlier and we are now once again starting to load the liquid hydrogen into the fuel cell system. Astronauts Gordon Cooper and Pete Conrad are still sound asleep according to our last report from the Crew Quarters. Our problem this morning is namely concerned with attempting to load this fuel into the liquid hydrogen sphere aboard the spacecraft within the fuel cell system. We are attempting to load it to 4 percent above the capacity we want at lift-off, because of the low temperature of this particular fuel, just like any rocket launching we are using temperatures that are very low fuel, you do get a boiloff. Now this is no connection to a problem that we possibly might have had the other day when you received reports from the McDonnell Plant that there could be some type of heat transfer problem within the fuel cell system. This was rather thoroughly discussed, earlier in the mission. We still feel that we have no problem along these lines with the Gemini V spacecraft. This is no connection this morning with the problems that we discussed yesterday and thought we did not have any problems with this heat transfer situation. This morning our problem is concerned with loading the fuel aboard. There is no heat transfer condition as such, we are attempting to overload the system and now that we have switched trailers we expect that we will be resuming the count in a short while and expect that we will be able to load the fuel

MISSION COMMENTARY TRANSCRIPT

Tape 5, Page 2

aboard. This is Gemini Launch Control at the Cape. We are T-300 minutes and holding.

END OF TAPE

This is Gemini launch control at Cape Kennedy. We are still at T minus 300 minutes and holding. We have now started again to feed the liquid hydrogen fuel into the hydrogen sphere in the fuel cell system. We have a report that we are now up to 100 percent in the capacity of this particular sphere. We want to get up, as we reported earlier, to an overfill, that is, some 4 percent above the quantity we want to fly with. We are still starting to fuel now and we will not pick up the count until we reach this over-capacity within the fuel sphere, so that we will be assured at launch time that we have our full liquid hydrogen capacity in the spacecraft. Gordon Cooper and Pete Conrad, the prime pilots for the Gemini V flight are still having a nice sleep. They are over in the main spacecraft operations building. We have just received a report at this time that the hold will be continued for an additional 30 minutes from this time. We are still loading the liquid hydrogen fuel into the fuel cell system. We will not pick up the count until we reach the overfill capacity of this particular system. Once this is ready to go, we will pick up the count. The additional 30 minutes that has been declared at this time is to insure that we are ready with the fuel cell system prior to picking out, picking up the final phases of the spacecraft count, starting at 300. The launch vehicle, meanwhile, on pad 19 is standing by. They will pick up their final count at 240 minutes. In addition to the fueling at the present time that is going on with the spacecraft, we are also completing some checks with the radar system that will be used in connected with the radar evaluation pod during the Gemini V mission. This is Gemini launch control. We are holding at T minus 300 minutes.

This is Gemini Launch Control at the Cape. We are still at T-300 minutes and holding on the Gemini V mission. Astronauts Gordon Cooper and Pete Conrad still sleeping soundly. The launch crew is working rather feverously at the Pad in an attempt to finally load the liquid hydrogen aboard the fuel cell system in the spacecraft. We are now up to about 100 percent in the liquid hydrogen within this sphere. Now in this small sphere, which contains some 22 pounds of hydrogen altogether, we have now practically reached the top of the sphere. There is pressure feeding in at the top, we call it ullage. This is called -- ullage is the amount of space that is left, of course. It is under pressure and the process to overfill, that is, get is get in this 4 percent more, is a more difficult and time consuming operation this morning. We can't tell whether the problem is concerned with perhaps some pressure in the sphere or whether it might be that some aspect is not properly chilled down, of course, we are working with liquid hydrogen at 423° below zero. We know of no defects within the system at the present time. We are still looking at the system, we are still attempting to overfill the tank at the present time. This hold has been declared to last for some 15 some 20 to 25 minutes from now as we get further reports from the blockhouse we will pass them on to you. We are holding at T-300 minutes. This is Gemini Launch Control.

END OF TAPE

This is Gemini Launch Control at the Cape. We are T-300 minutes and holding. Our count remains on the Gemini V mission at T-300 and holding. We are still checking closely on the feeding on the liquid hydrogen fuel into the fuel cell system onboard the Gemini V spacecraft. We still have not attained the 104 capacity that we are seeking for this flight, that is, we overload the liquid hydrogen sphere containing the fuel for the fuel cell system to insure that at liftoff we will have full capacity of liquid hydrogen fuel for the 8-day flight. We are at T-300 minutes and holding. We have had a report that the Astronauts might have gotten up, we do not have confirmation at this time, as soon as we do we will report it to you. We are at T-300 minutes and holding. This is Gemini Launch Control at the Cape.

END OF TAPE

This is Gemini Launch Control at the Cape. We are still at T-300 minutes and holding. We are still continuing to load the liquid hydrogen aboard the fuel cell system. We now have a report from the blockhouse that we are up to 101.5 percent in the loading. As we reported earlier we were attempting to load 4 percent above the capacity we want to fly with during the 8-day mission. We are still continuing the slow tedious process of loading the liquid hydrogen. Our count remains at T-300 minutes and holding. This is Gemini Launch Control.

END OF TAPE

This is Gemini Launch Control at the Cape. We have been informed that the countdown of Gemini V Mission is expected to resume shortly. We have continued our loading of liquid hydrogen fuel in the fuel cell system. We have reached an over capacity up to 101.5 percent and the Project Officials, both here and Houston, have determined that this will be acceptable at the present time for the flight. We have been placed on alert that the countdown will resume momentarily. In approximately 1 minute now, the count will be resumed. We are just about 20 seconds away from resuming the countdown at T-300. Our last report a few moments ago gave an indication that the Command Pilot -- Prime Pilots for the flight both were still asleep but it is expected that they will get up very shortly. Now 5 seconds away. T-300 minutes and counting. T-300 minutes and counting on the Gemini V flight. This is Gemini Launch Control at the Cape.

END OF TAPE

This is Gemini Launch Control at the Cape. We are now at T-285 minutes and counting. T-285 and counting. In the Gemini spacecraft at this time are backup pilots Neil Armstrong, and Elliott See. At the present time in the countdown, the backup pilots are going to do a series of communication checks between the spacecraft and the blockhouse here at Cape Kennedy. All systems are looking good at the present time, and this is Gemini Launch Control, T-285 minutes and 20 seconds and counting.

END OF TAPE

This is Gemini Launch Control at the Cape. We are now at T-276 minutes and counting. At this point in the Gemini V countdown we are proceeding normally. Backup Pilots Neil Armstrong and Elliot See are in the Gemini V spacecraft and continuing a series of communication checks from the spacecraft at this time. To elaborate a little further on the problems we encountered earlier this morning on loading fuel into the Gemini V spacecraft fuel cell, this was basically the problem we faced. We had liquid hydrogen, a cryogenic fuel, that is, a fuel at a very low temperature, as a matter of fact, 423° below zero, being fed into this pumice like fuel sphere. As we reached about 100 capacity, a normal heating situation which is encountered in any type of situation of loading hydrogen fuel occurs and we get what is called a boil-off, and some of the liquid hydrogen becomes a gas. Then if we try to overfill, we would face this situation of bringing more liquid hydrogen into the system while hydrogen gas within the sphere was boiling off at the same time. This gave us a back pressure in the system. Once again, this is a normal situation, and makes for a time consuming operation to overfill liquid hydrogen in this particular system. All conditions are still looking go at this time, we understand Astronauts Cooper and Conrad are now up. We will have further information on this shortly. This is Gemini Launch Control at the Cape T-274 minutes and 50 seconds and counting.

END OF TAPE

This is Gemini Launch Control at the Cape. We are now at T-266 minutes and counting. All is going well at the present time in the countdown for the Gemini V Flight. We have a report that some 5 minutes ago, at T-270 in the countdown, Astronauts Gordon Cooper and Pete Conrad were awakened by Deke Slayton in the Manned Spacecraft Operations Building Crew Quarters at Merrett Island. At this point in the countdown, coming up on T-265 and counting, in the spacecraft Neil Armstrong and Elliot See, the backup pilots for this mission continue a series of checkouts within the spacecraft. They are now coming up on a series of power checks of various systems in the spacecraft with both reporting back to the Spacecraft Test Conductor and to the Manned Spacecraft Center Mission Control Center in Houston on the status of their power systems and voltages. Weather conditions look generally the same as were reported yesterday for the Worldwide tracking operation on Gemini V. For the Cape area where the launch time later this morning, we are looking for scattered clouds at about 2000 feet, a temperature of 86 degrees, winds from the south southeast at 10 miles per hour. Our latest report on Typhoon Lucy spots it some 400 miles south of Tokeo. It is in a secondary recovery area, but it is not expected to effect our launching this morning. One destroyer has been moved out of the area and brought back to it Yakauska, Japan base. However, we do not feel at the present time that there will be any effect on the launching this morning by either Typhoon Lucy or Typhoon Mary which is now swept off the South China Coast some 200 miles off Formosa. They are watching weather conditions throughout the world as we continue our countdown at the

present time. We foresee no difficulties that would create a hold in our launching attempt this morning at the present time. This is Gemini Launch Control. We are now coming up on T-264 minutes. MARK. T-264 minutes and counting.

END OF TAPE

This is Gemini launch control at the Cape. Count is T minus 256 minutes and counting; T minus 256 and counting. As the prime pilots for the Gemini V mission, Gordon Cooper and Pete Conrad, have been awakened and now getting up and getting ready for their flight. They were awakened at 7:48 Eastern Standard Time by Deke Slaton in the crew quarters at the Manned Spacecraft Operations Building in Merritt Island. Meanwhile, at launch complex 19, their backup pilots, Neal Armstrong and Elliot See, are still in the Gemini V spacecraft, continuing a series of checks. At this point in the countdown, we are completing some power checks in the spacecraft and we're preparing to meet the launch vehicle countdown at T minus 240. At this point, we start a terminal count where spacecraft launch vehicle and the Air Force Eastern Test Range all meet in a final joint countdown at T-240. All conditions looking good at this time, coming up on T-255 mark, T-255 minutes and counting. This is Gemini launch control at the Cape.

This is Gemini Launch Control at Cape Kennedy. We are now at T-246 minutes and counting. All situations, all conditions looking good on the Gemini V mission at the present time. As far as the spacecraft is concerned, we are completing some power checks in the spacecraft and preparing for a roll call, a status check, of all different conditions concerned with the spacecraft prior to meeting the launch vehicle countdown some 5 minutes from now. In the blockhouse, as far as the launch vehicle is concerned, the same situation is occurring. They are preparing for the spacecraft to meet them at T-240 minutes in the countdown. All conditions looking good at the present time. Backup Pilots Neil Armstrong and Elliott See are still in the spacecraft continuing their checks. T-245 minutes and 10 seconds -- MARK. This is Gemini Launch Control at the Cape.

END OF TAPE

This is Gemini launch control, T-240 minutes and counting. Our final countdown, the meeting of the spacecraft with the launch vehicle in the final count has begun as the spacecraft and launch vehicle join together for a general count starting at T-240 minutes. All systems looking good at the present time on the launch pad. Astronauts Neil Armstrong and Elliot See still aboard the Gemini V spacecraft, going through final checkouts prior to the arrival of the prime pilots, Gordon Cooper and Pete Conrad. This is Gemini launch control. T-239 minutes and 22 seconds in counting.

This is Gemini Launch Control at the Cape. T-226 minutes and counting. Countdown on the Gemini V launch continues to run smoothly at this time. At this point, Astronauts Gordon Cooper and Pete Conrad the Prime Pilots for this mission should have finished up their physical examination in the Crew Quarters and are probably sitting down for breakfast at this time, or just about to in a matter of a few minutes. We expect to have a complete report on their activities in the Crew Quarters a little later in the count. At this time at the Launch Pad conditions are still going along very well. We are running through some checks with the destruct system aboard the Titan II Launch Vehicle from the blockhouse at this time. This is one of a series of tests during the terminal phase of the countdown to insure that the destruct system in the launch vehicle will be operable during flight. The destruct system itself of course is tied into the malfunction detection system within the launch vehicle spacecraft configuration which would tie into an abort of the flight if for any reason the decision is made to terminate the flight at any time. This is Gemini Launch Control now 224 minutes and 50 seconds and counting.

END OF TAPE

This is Gemini launch control at the Cape. We are now T-216 minutes and counting. Countdown on Gemini V mission still going smoothly at this time. At this point in the countdown at launch complex 19, a series of compatibility checks going on checking the launch vehicle's radio command guidance system, tying the radio command guidance system also into the spacecraft computer. So, we are getting a compatibility check between a computer in the spacecraft and the radio command guidance system that will carry the Titan II on its flight. Astronauts Neil Armstrong and Elliot See, the backup pilots for this mission, still in the spacecraft, still performing their checks, and they will be ready later in the count to give a full report to the prime pilots, Gordon Cooper and Pete Conrad when they are ready to board. This is Gemini launch control at the Cape, now T-215 minutes, 5 seconds and counting.

This is Gemini launch control at the Cape. We have T-195 minutes and counting, T-195 and counting. Correction, that's 196. Our countdown is going smoothly at the present time. In the block house, we are still continuing our checks at the present time with the launch vehicle. We are installing the initiators in the destruct system in the Titan II launch vehicle. As a result, all radio frequency in the area has been turned off while the initiators are installed. Later in the countdown, down to the last few minutes, these initiators are on, so in the event a destruct has to occur after lift-off, then it would be accomplished. Right now the initiators are being put in and all radio frequency is off. Our checkouts still continue with the spacecraft, but at the present time we are minus our backup pilots, Neil Armstrong and Pete Conrad. They left the spacecraft about 9 minutes ago. At this time, in a matter of 10 minutes in the countdown, the prime pilots, Gordon Cooper and Pete Conrad are due to depart from their crew quarters. Later in the count we will have the exact times for you when they depart for launch complex 19 where they will suit-up for the flight. This is Gemini launch control. All conditions looking good on the Gemini V countdown at this time.

End of tape.

The Prime Pilots for the Gemini V --- Astronauts Gordon Cooper and Pete Conrad have departed the Crew Quarters on their way to Launch Complex 16, some 8 minutes ago at 9:12 a.m. e.s.t. and they departed the crew quarters. They are now on their way to the suit trailer at Launch Complex 16 which is adjacent to the Gemini Launch Complex where they will don their suits, go through their checkout and prepare for the final moments of the launch. They will be at the crew quarters until 108 minutes in the countdown when they, correction, they will be at the trailer at launch complex 16 checking out their space suits till about 108 minutes in the count. At that time they will depart from the trailer and go to adjacent complex 19 to board the spacecraft for this flight. This is Gemini Launch Control. Our countdown continues to run smoothly. We are coming up on T-177 minutes -- MARK. T-177 minutes and counting.

END OF TAPE

Two young tourists from Bever Falls, Pennsylvania, on their way to Miami, stopped on the beach last night in the area north of the Cape. This morning, they walked south on the beach to an area around Pad 19 where they were apprehended by security police. The pair were identified as Gary Ralph Young, age 22, and Nora Lee Mullenger, age 17. They are being held by security police for questioning at this time.

END OF TAPE

This is Gemini control, Houston. Good morning.

The delay on the flight this morning of a little over three hours has delayed the planned timing of ejection of our rendezvous evaluation pod. We now expect that pod to be ejected in, during the second revolution, at one hour and 54 minutes into the flight. This would assume an approximate 11:18 A.M. Central Standard lift-off. The spectrometer, one of three spectrometers which will be used during the flight, perhaps the key spectrometer that will be used to track the pod and take certain other ground and space measurements, which is cooled by liquid neon gas supply planned to last about 12 hours into the flight, has been topped off. It was topped off about three hours ago, and we have at least a 12-hour lifetime on that particular experiment. There are two other spectrometers which will be used for various space measurements, earth measurements, which do not require any special liquid cooling. Some information on Gordon Cooper: Dr. Berry has recalled that his heart rate, on his MA-9 lift-off was 168. He expects about the same this morning on Gordo. At rest, Gordon Cooper normally runs a 65 to 70 heartbeat. Pete Conrad runs slightly above Cooper at rest; his heart rate is 70 to 75 and Dr. Berry expects his rate at lift-off will be something up in the 170 range. Around the world, the network is quite green this morning, with one or two exceptions: Hawaii has had some trouble with their C-band radar, and their telemetry equipment. They're estimating a complete fix within 5 minutes. Another station, a ship, the U.S.S. Wheeling, stationed just north of Midway Island in the Pacific, has been unable to communicate by either voice or teletype. This station is not a critical one, and would

not be a restraint to the launch. The other ships, the coastal sentry Quebec has been playing tag with some typhoons the last couple of days; however, it is on the station just off the island of Formosa. The Rose Knot Victor for this flight is stationed about 5.750 miles off the Chilean coast, South America, and, as I indicated earlier, all the stations with the exception of Hawaii and the Wheeling are quite green and ready to support the launch. We have one destroyer programed for the far western Pacific area, has been ordered back to its station in Japan because of the typhoon activity in the western Pacific. Airplanes which will support this flight, more than 20 at launch, have been deploying, starting about 3 hours ago, their times of departure are staggered out; the first one, however, left Patrick Air Force Base at about 6:00 A.M., Houston time this morning. That is pretty much the picture from the Mission Control Center in Houston.

End of tape.

This is Gemini Launch Control at the Cape. Our countdown is continuing smoothly on the Gemini V Mission. We now stand at 123 minutes 7 seconds and counting. Astronauts Gordon Cooper and Pete Conrad, the Prime Pilots for the flight are completing their suiting procedures in the Suit Trailer at Launch Complex 16 and are due to depart for Launch Complex 19 and the Gemini V spacecraft at approximately T-108 minutes. In the mean time, Astronaut Neil Armstrong has returned to the spacecraft. He came back about 25 minutes ago and he is continuing the series of tests in preparation for the crew ingress. At the present time the spacecraft is monitoring the pressurization in the launch vehicle that was finished some 30 minutes ago. This morning, in the crew quarters, Astronauts Cooper and Conrad had breakfast with the following people. The -- joining them for breakfast were the Gemini VI Crew, Astronauts Wally Schirra and Tom Stafford, Deke Slayton, who is the Assistant Director of the Manned Spacecraft Center for Crew Operations, and the two physicians who gave them their physical examination this morning. Dr. Gene Tubbs, and Dr. Howard Minners. The breakfast consisted of a menu of the following: Orange juice, steaks, scrambled eggs, and coffee. Astronauts Cooper and Conrad are now finishing up their suit checks in the trailer and are due to come out some 12 minutes from now. This is Gemini Launch Control. Our count continuing to proceed smoothly now 121 minutes 31 seconds and counting.

END OF TAPE

This is Gemini control, Houston. Within the last 15 minutes, the red team, the red flight control team headed by Christ Kraft, sometimes called the "go team", has taken its places at the consoles here in Houston. The blue team has been on station here for the past 7 hours, are briefing their counterparts and moving out of the room. The capsule communicators around the world have completed what they call a voice confidence test, quite successfully. Earlier we reported that the Hawaii station was having trouble with its C-band radar and with one other item, it was the telemetry system. Both trouble spots have been cleared up and Hawaii along with all the other stations around the world are completely green at right now. The Wheeling, the ship parked just north of Midway Island in the Pacific, now has voice capability. They are still without teletype, but again we emphasize this would not be a constraint to the launch. The, meanwhile, down at pad 16, the astronauts have completed a suit purge, a check of their pressure suits, and they should be leaving that complex within a very few minutes. This is Gemini control, Houston, with one hour and 4 minutes to go before launch.

End of tape.

Admiral Thomas H. Moore is Commander-in-Chief of Atlantic Fleet, and he is responsible for the ships which are deployed in the Recovery Area in the Atlantic. Admiral, could you tell us how many you have and where they are?

Well, we have 10 ships now of all types, lead off by the Lake Champaign and 5 destroyers. And, of course, in addition, there are ships in the Pacific Ocean too.

Now, these Atlantic ships, the primary recovery area, where are they located now?

They are disposed along a line between the Coast of Florida and the Coast of Africa.

Has the delay ment that you had to change any of these positions?

No, none what ever.

Will it mean possible changes later?

No, I think that if the shot goes as scheduled, the ships will carry out their regular instructions to move in coordination with the order. For instance, the Lake Champaign, which is in the Bermuda - -

END OF TAPE

This is Gemini launch control at the Cape. Countdown is still proceeding normally, we have T-91 minutes and 41 seconds at the present time. Astronauts Gordon Cooper and Pete Conrad are now aboard the Gemini V spacecraft. They entered the spacecraft within seconds of each other at 10:42 A.M. Eastern Standard Time. Once the two pilots do get settled in the spacecraft, they will proceed through a series of intercom checks, these are communication checks, with the block house and with Mission Control in Houston. This will be followed by some daily bio-medical readouts primarily with the blood pressure system. This is Gemini launch control, now 91 minutes, 10 seconds and counting.

End of tape.

This is Gemini Launch Control at the Cape, now at T-75 minutes and 53 seconds and counting. Everything is still going smoothly at this time. Just at the time in the countdown when it is supposed to, Astronaut Gordon Cooper's hatch was closed. It was closed at 11:01 a.m. e.s.t. Reopened for a moment, and then reclosed. We are now sealing the hatches following this we will prepare to breakup the white room area and prepare for lowering the erector on Launch Complex 19. Both Astronauts are reporting their communications checks. They sould good. As they entered the spacecraft, .. there was a little kidding on the part of some of the technicians in the white room, this is a usual practice that does occur, it has occurred on both the GT-3 and the Gemini IV flights previously. All conditions still looking good at Launch Complex 19, now 75 minutes and counting. This is Gemini Launch Control.

END OF TAPE

This is Gemini launch control at Cape Kennedy. The countdown still proceeding satisfactorily, now T-69 minutes and 35 seconds and counting. As reported earlier, both hatches on the Gemini V spacecraft have been closed, and Astronauts Gordon Cooper, the command pilot, and Pete Conrad, the pilot, are reporting to the block house in a series of functions inside the spacecraft. They have been giving some reports through Astronaut Rusty Schwiekard, who is the capsule communicator in the block house. At the present time, the cabin has been purged of air, and is now on 100 percent oxygen. All systems still looking good at this time, coming up on T-69 minutes, mark, T-69 minutes and counting.

End of tape.

This is Gemini Launch Control at the Cape, countdown is now T-59 minutes and counting. All phases still proceeding satisfactorily at Launch Complex 19. At the present time, the Gemini V Pilots are running through a series of panel switch tests with Astronaut Rusty Schweikart in the blockhouse. This is to insure that the various switches on the panels within the spacecraft are at the proper settings. The Launch Vehicle Test Conductor in the mean time is monitoring a series of tests with the radio command guidance system that carries the launch vehicle in flight. All systems still looking good. We are now at T-58 minutes 20 seconds and counting. This is Gemini Launch Control at the Cape.

END OF TAPE

This is Gemini Launch Control at the Cape. Now at T-50 minutes and 22 seconds and counting. Our countdown still proceeds to go satisfactorily. In the Gemini V spacecraft at the present time Astronauts Cooper and Conrad are completing their panel switch reports to Astronaut Rusty Schweikart in the blockhouse. As far as the launch vehicle is concerned, a series of tests with the Air Force Eastern Test Range for tracking purposes are now being conducted. The Gemini V flight will be certified as far as any possible international flight records are concerned. Representing the National Aeronautics Association here at Cape Kennedy to certify the Gemini V flight is Mr. W. B. Wents. Mr. Wents is with Rocketdyne Division of North American Aviation. The National Aeronautics Association is affiliated with Federation Aeronautic International, which is the international organization that certifies World Flight Records. Also, certifying for the National Aeronautics Association in Houston today for the lift-off is Dr. George Szego. Dr. Szego is Director of Space Systems for the Institute of Defense Analysis. At Houston for the touchdown after the flight will be Mr. J. R. Drake, who is Corporate Director of North American Aviation, Incorporated. All three of these gentlemen are representing the National Aeronautics Association in this particular capacity to certify the Gemini V Flight for any possible flight records. This is Gemini Launch Control at the Cape now at T-48 minutes and 39 seconds and counting.

END OF TAPE.

This is Gemini Launch Control at the Cape coming upon T-39 minutes - MARK. T-39 minutes and counting. At both Control Centers and at the Launch Pad, there's a little bit of concern about a nice large black cloud in the Launch Complex 19 area at the present time. Weather men are taking a closer look and we expect a further report on it shortly. Meanwhile, the count is still going smoothly and Astronauts Cooper and Conrad are sounding very good as they continue to report from the spacecraft. They have just finished up an intercom check and are preparing for erector lowering which will come some 3 minutes and 20 seconds from now, if all continues smoothly. Meanwhile, on the launch vehicle itself, we passed one of the highlights in the countdown where the pre valves have been opened in the first stage booster. These are valves within the propulsion system that permit both the oxidizer and the fuel to flow a little closer to the thrust chamber. Once these pre valves are opened, there is just one valve left that keeps the fuel and oxidizer from the thrust chamber itself. This is called a thrust chamber valve. The thrust chamber valve will be initiated at ignition. The pre valve in the second stage of the Titan II are not open until some 35 seconds before launch. We are keeping a close look on our black cloud and expect to have a report momentarily. This is Gemini Launch Control, T-37 minutes and 30 seconds and counting.

END OF TAPE

This is Gemini launch control at the Cape. The Gemini V mission still counting at T-31 minutes and 26 seconds. Astronauts Gordon Cooper and Pete Conrad still sitting comfortably in the Gemini V spacecraft, reporting back on the activity within their vehicle. However, in the meantime, we have not yet started to move the erector. There is no problem with the erector itself, but we are still awaiting a determination on that pesky black cloud that we have in the area. We expect to have some more information forthcoming very soon. In the meantime, the count continues. It is now T-30 minutes, 54 seconds and counting. This is Gemini launch control at the Cape.

End of tape.

This is Gemini Launch Control at the Cape. We are now at T-25 minutes 44 seconds and counting. There has been a little rain out in Launch Complex 19 from our black cloud in the area, we are still keeping close watch, but the countdown is still continuing. An attempt has not been made yet to lower the erector on Launch Pad 19. Astronauts Cooper and Conrad are standing by. They are getting reports on the situation. In the mean time, as far as the launch vehicle is concerned, if you remember the POGO situation we had with the Titan II vehicle, we made a fix in the fuel system of the booster in order to insure that we would not get any oscillations on the flight. At the present time now the erector is coming down on Launch Complex 19. We are now at T-25 minutes and counting. To continue on the POGO situation, the --we had to make a manual fix of the spin type which is located in the fuel system of the first stage for a reason that is not available at the present time. This had to be done manually. It has been accomplished and the standpipe itself has been chopped off. This is a small device that is added to the fuel system to prevent any oscillation during the flight of the Titan II. This is Gemini Launch Control. We are now at T-24 minutes and 24 seconds and counting.

END OF TAPE

This is Gemini launch control at the Cape. Our countdown continues; it is now T-19 minutes and 28 seconds and counting. Our countdown is continuing on. The erector is about 95 percent lower at this time. To get back to our Pogo problem this morning and explain it perhaps a little further, back on the earlier history of the Titan II launch vehicle, sloshing of the fuel system in the first stage created some oscillation, some actual shaking in the launch vehicle, that was determined would constitute a problem on manned flight. As a result, a fix was made in the first stage booster in which a spin pipe, an actual small pipe was inserted into the fuel system to bleed off part of the oxidizer in the system and thus prevent the sloshing. Now, this oxidizer which is at an extremely low temperature, has to be topped off similar to the liquid hydrogen that we were topping off earlier this morning. In order to do this, nitrogen is fed into the system. We were unable to do this automatically as it should be done, and as a result, was manually fixed at the launch pad a short while ago. We are in fine condition as far as the spin pipe, and the Pogo problem is concerned right now. We are still counting and the count is now coming up on T-18 minutes, and several seconds.

End of tape.

This is Gemini Launch Control at the Cape. Our countdown continues and it is now T-14 minutes and 30 seconds and counting. Coming up is an important test at the Launch Pad. This will be a test of the spacecraft propulsion system, that is, the primary propulsion called the Orbit Attitude and Maneuvering System. A series of tests with one and one-half second bursts from the thrusters in the spacecraft will be coming up shortly. As the spacecraft propulsion system is being tested, Pilot Pete Conrad in the spacecraft will be monitoring these functions. The tests will go as follows: with the thrusters, with one and one-half second bursts each, starting with a yaw left, a pitch down, a yaw right, a pitch up, and a yaw left. This covers all aspects of the thruster system and if it is successfully completed, we will continue with the count. This is Gemini Launch Control, now T-13 minutes and 30 seconds and counting.

END OF TAPE

This is Gemini launch control at the Cape. We are now at T-10 minutes and 9 seconds. We plan to come up with a hold at T-10 minutes. T-10 minutes and holding on the Gemini V mission. T-10 and holding. We are about to check now. We understand that we have a telemetry problem with the spacecraft. We have no further information available on it at this moment. We hope to have it very shortly. In the meantime, Astronauts Cooper and Conrad have been discussing the weather in the spacecraft with Astronaut Rusty Schwiebart in the block house. Pete Conrad did confirm that he saw a couple of raindrops on his window, but there is no concern. This is Gemini launch control. T-10 minutes and holding.

End of tape.

This is Gemini Launch Control at Cape Kennedy. We are still at T-10 minutes and holding on the Gemini V flight. We are checking into our problem with the Telemetry System in the spacecraft. Our problem centered around Commutators in the spacecraft telemetry system.

What a commutator does is to switch from one channel of telemetry to another automatically within the telemetry system. In the blockhouse, we are receiving some low level readings on these commutators. As a result, we determine to hold and we are now investigating to see what the problem is. The problem is not necessarily with the commutators themselves, but because of the low level readings it was determined to hold and investigate further. This is Gemini Launch Control at T-10 minutes and holding.

END OF TAPE

...T-10 minutes and holding. The erector is now being raised back to the launch vehicle on launch complex 19. Our weatherman has told us that there is a good possibility of thunder showers, and in order not to take any chance with the mission, the erector is being raised. The Astronauts Gordon Cooper and Pete Conrad are taking it very well. Pete Conrad, when he heard, requested permission from the spacecraft test conductor to turn on the spacecraft windshield wipers, in jest, of course. This is Gemini launch control. We will have a further report momentarily. We are still holding at T-10 minutes.

End of tape.

This is Gemini Control, Houston. The erector has been put back up around the Titan II and spacecraft to serve as an umbrella because there is thundershower activity in the area. There is also some lighting farther south down on the coast and it serves as a better ground, rather than having the spacecraft and launch vehicle exposed. The problems in the spacecraft, we encountered a telemetry dropout or a loss of signal on one of the telemetry links, between T-20 minutes T-10 minutes. The secondary circuit, the secondary system in that particular circuit did work without dropout. We switched back to the primary circuit, and it also worked uninterrupted, but the dropout has caused concern among the Engineers in the blockhouse and back here in Houston. They plan to look at this problem for at least another 15 minutes by which time we should be able to better advise you on the length of the hold, or whether we are going to go today. The hold to date has not caused any hardship on the mission, and quite the contrary, the fuel and the oxidizer in the bird are warming up slower than usual and the warming up effect has the overall effect of enhancing, that is, we could actually loft into orbit slightly more weight at this point in time than we could have 3 or 4 hours earlier if we launched then. So, it is a margin of comfort in that area. This is Gemini Control in Houston holding at T-10 minutes.

END OF TAPE.

Gemini launch control at the Cape. Our countdown remains at T-10 minutes and holding. We are still checking out our telemetry problem. The astronauts in the spacecraft, Gordon Cooper and Pete Conrad, got a report a short while ago that we still do not have the answer. They express their sentiments by saying, "Let's hang on and let's try and go today." We are still keeping a close watch on the weather and checking out our telemetry problem. This is Gemini launch control at the Cape. We are still holding at T-10 minutes.

This is Gemini Control, Houston. Mission Director Christinson has just announced he's scrubbing the mission. Stand by 1.

This is Gemini Control, Houston. I want to reaffirm that the mission has been scrubbed. We are now considering what the minimum recycling time will be. We cannot quote you an estimate on the turn-around time. The mission was scrubbed because the Electronic Problems in the spacecraft, and primarily in that telemetry system. Within a very few minutes, we expect to have an estimate on how soon the spacecraft and the bird can be turned around or recycled as they call it, and try for another launch. The pilots should be leaving the spacecraft within 30 minutes, I would say. Stand by for further word.

END OF TAPE

.....after the determination is made. In the meantime, the astronauts have requested permission to leave the spacecraft and action is being taken at the present time to open up the hatches and take them out. It is expected that the astronauts will be coming out of the spacecraft in a short time. This is Gemini launch control.

End of tape.

This is Gemini Launch Control. The Gemini V Pilots are still in the spacecraft at the present time. They are going through the whole sequence of power-down checks within the spacecraft to make sure all switches are in the proper position now that we have postponed the flight. Gordon Cooper spoke for himself and Pete Conrad when he came up with the following quote concerned with today's operation. Gordon said, "Awe Gee, you promised a launch today, and not a wet mock." "Awe Gee, you promised a launch today, and not a wet mock." Of course, when he refers to the Wet Mock, this is the simulated flight demonstration that occurs several weeks prior to a launch where the Astronauts do spend a number of hours in the spacecraft, of course, getting out and not taking off. This is Gemini Launch Control, we are still waiting word on a recycle. We will pass it on to you as soon as it is available.

END OF TAPE

This is Gemini launch control at the Cape. Astronauts Gordon Cooper and Pete Conrad are now out of their spacecraft. They have come down the elevator, and are on their way to the trailer, the suit-up trailer, at launch complex 16. We are still having a session to determine if we can discover what our problem was on this telemetry dropout and as we get information we will pass it on to you immediately.

End of tape.

This is Gemini Control, Houston, 4 hours, 13 minutes into the mission. We have had no contact since the Canarvan pass, the spacecraft over the island chain in the far southwestern Pacific. It's still running in a very much powered down configuration. Probably the most optimistic thing we've heard came from Jim McDivitt recently and said the decrease seems to, the rate of decrease, seems less than it had been in that O₂ pressure element that we're watching. The flight continues here; most of the controllers are out on a luncheon break, and in general things have not changed in the past ten minutes, since our last report. Gemini Control, Houston.

END OF TAPE

This is Gemini Control at Houston, 4 hours 32 minutes into the mission. Our status is unchanged. The spacecraft just leaving the Hawaii station acquisition area. We did power up the transmitters and talk with the spacecraft and powered up several pieces of equipment to check our readings, and we find that reluctant oxygen pressure in the fuel cell was standing at about 65 pounds. When this value, if it drops as low as 20, we would have to turn off at least one of the two fuel cell sections because at that point, we would lose our ability to regulate and monitor the pressure. The flight as we say, continues of the States. We will leave the spacecraft in a powered down configuration except for a brief interrogation, probably over the Texas site. It may be the Texas site, or it may be Canaveral, chances are, right now it looks like the Texas site will be used. Earlier we identified that should a termination become necessary in the next few orbits, we would probably elect to land in an area called 6-4. This is a point about 490 miles northeast of Hawaii. There is an oiler on station there, earlier identified by its call sign it is using today. The call sign is bankside K. The name of the ship is the Chipola. C and in Charlie, i-p-o-l-a. In addition there is a destroyer steaming in that direction, steaming out of Pearl Harbour. It's present position is 190 miles northeast of Hawaii and it is proceeding to a point some 60 miles uprange from the Chipola. The -- in summation then, the general status of the fuel is unchanged. We are still watching it very closely and at 4 hours and 34 minutes into the mission, this is Gemini Control.

In addition, we have the tape from the Hawaii pass wrapped up and we are prepared to play it for you now.

Gemini Control here. We have the tape conversation, however brief, from the Hawaii pass. Its wrapped up and we are prepared to play that tape for you now.

Hawaii Cap Com Gemini V, Hawaii Cap Com.

Conrad Go ahead Hawaii.

Hawaii Cap Com Would you place your OAMS heater circuit breaker to off.

Conrad Roger, OAMS heater circuit breaker off.

Hawaii Cap Com Roger. Would you give me a fuel cell O₂ quantity readout, please.

Conrad Roger, the fuel cell O₂ quantity is reading about 65 for quantity. 96 percent.

Hawaii Cap Com Roger. What about tank pressure?

Conrad About 65 psia.

Hawaii Cap Com Roger.

Hawaii Cap Com Gemini V, Hawaii. You can power back down.

Conrad Roger.

Hawaii Cap Com Hawaii has loss of telemetry.

Cape Flight Okay, Hawaii. Tell him not to acknowledge, but the next time you bring him up is over Canaveral. And we will call him, but do not answer and we will go through the same procedure over Canaveral.

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Hawaii Cap Com Gemini V, Hawaii. The Cape advises that ..

END OF TAPE

This is Gemini Control Houston, 5 hours 2 minutes into the mission. We are on our forth revolution with the spacecraft moving down across the South Atlantic Ocean just crossed the Equator. During a long quiet pass across the United States, we had a brief conversation from early between Pete Conrad, I believe, and our Corpus Christi station. We will play that tape for you a little later, but first I want to bring you up to date on the fuel cell. Basically the cell -- the oxygen side of the cell operates with a small conduit carrying a wire which acts a heater. Some source of heat is needed in the cell to bring the temperature of the oxygen, which is kept in the bottle, at -297 degrees, make it rise, elevate slightly in temperature to build up pressure to drive the oxygen out of the bottle and into the cell itself.. It's this heater that apparently is inoperative and we've got just a small trickle of oxygen out of the bottle rather than the normal flow that we should have. The decision has been made to turn off the power to one of the two sections onboard and to monitor that situation for awhile to see if it has any effect. We are still watching the situation very closely. The heads are together on the problem and we will continue to monitor it very carefully and bring you any development as it occurs.. We have the tape ready to play for you over the State side pass, and we will bring it to you now.

Houston Flight Gemini V, Gemini V. This is Houston here. Would you please bring up your UHF transmitter.

Cooper Roger, go ahead. This is Gemini V.

Houston Flight Roger, stand by here a minute.

Carnarvon Cap Com Gemini V, Carnarvon, would you place your adapter C-band switch to CONTINUOUS, and your TM switch to real time at Acq 8.

Carnarvon Cap Com Carnarvon has PCM solid. Would you bring up your UHF transmitter.

Houston Flight What are your readouts?

Carnarvon Cap Com Stand by Flight.

Carnarvon Cap Com Gemini V, we'd like a readout of fuel cell O₂ quantity and the fuel cell O₂ pressure.

Houston Flight What do you read on the ground?

Conrad Roger, this is Gemini V. The fuel cell quantity is 96 percent, and the pressure is 60. 60.

Carnarvon Cap Com Roger, copied. 60 on pressure and 96 on quantity.

Conrad We further advise that the secondary power switch is off, secondary coolant loop is powered down, and the REP is right out here with us about 2000 feet away.

Carnarvon Cap Com Roger.

Carnarvon Cap Com Flight, we are getting the PCM count on that measurement TM.

Houston Flight Rog.

Carnarvon Cap Com We have acknowledged C-band track.

Conrad We also -- be advised that we have the C-band beacon off, the telemetry off, and in that powered down configuration we are pulling 10.2 amps.

Carnarvon Cap Com Roger. Copied. 10.2 amps and powered down configuration.

Carnarvon Cap Com Flight, the -- stand by, we are converting the binary count now.

Houston Flight Binary count.

Carnarvon Cap Com Binary count 71.2 percent. That's pressure Flight, 71.2 pressure.

Houston Flight We copy, 71.2 pressure.

Carnarvon Cap Com Roger. Okay, you want him to have the real-time TM off.

Houston Flight Carnarvon, Houston Flight.

Carnarvon Cap Com Go ahead.

Houston Flight Okay. We are satisfied with all of the data we've got. Tell him to power everything down to the same condition he had before, except the C-band which we will want him to turn off at your LOS, and you should give him a call to get him to turn it off.

Carnarvon Cap Com Roger, Flight.

Carnarvon Cap Com Gemini V, Carnarvon. Okay, place your TM switch back to Command and leave your beacon on. I'll advise you when to turn the beacon off.

Conrad Gemini V.

Carnarvon Cap Com And you can go back to UHF standby.

Conrad Roger.

END OF TAPE

Is being instructed to turn on its section 2 power switch again, and to bring its secondary coolant loop switch back on power. We like to see what the effect of this is, and we will stand by and come back to you at the conclusion of this pass which should be in a minute or two. This is Gemini Control Houston.

This is Gemini Control Houston 6 hours and 7 minutes into the mission. Just completed the Hawaii pass and this is what happened. We turned back on the power on section 2 area of that fuel cell operation. The Pilot, Pete Conrad, was then instructed to cycle, or manually switch on and off the recalcitrant heater switch. He did this four or five times with no effect that he could note on his switches onboard. The pilots were then instructed to leave the section 2 power supply on, and leave it in this configuration as we approach the United States at which point we will, of course, take another look. We have the tape of the Hawaii pass wrapped up for you and available to play at this time.

Houston Flight Hawaii, Houston Flight.

Hawaii Cap Com Let's bring up the heater switch also to the -- no, not the OAMS -- the on position on the fuel cell heater, O₂.

Hawaii Cap Com Roger.

Houston Flight He has had that off.

Hawaii Cap Com Hawaii is at a Cape contact.

Houston Flight Okay, we also want you to cycle -- let him cycle that heater switch to the fuel cell O₂ cell several times, to see if you see anything on the ground.

Hawaii Roger.

Houston Flight Go ahead Hawaii.

Hawaii Cap Com Gemini V, Hawaii Cap Com. Place your TMC switch to real time in accade and turn on your UHF transmitter. Telemetry solid.

Houston Flight Go ahead with your instructions.

Hawaii Cap Com Gemini V, Hawaii Cap Com.

Cooper Hawaii Cap Com, Gemini V here over.

Hawaii Cap Com Roger, we'd like you/^{to}bring your section two switch to on position and bring up pump A in the secondary cooling....

Conrad this is Gemini V and the number two power switch back on and the A secondary pump back on .

Hawaii Cap Com Roger, we'd like to leave it there for the next orbit and take a look at it.

Conrad O. K.

Hawaii Cap Com Roger, would you check with fuel cell O₂ heater switch off and on and then leave it back on.

Conrad O. K. It's been cycled and it's back on to the on position.

Hawaii Cap Com Roger. Did you see anything?

Houston Flight Did you see anything?

Hawaii Cap Com Negative, flight.

Houston Flight Have him cycle it two or three times.

Hawaii Cap Com I have a little TM dropouts here Flight, let me get it solid first.

Houston Flight Rog.

Hawaii Cap Com Gemini V, Hawaii Cap Com. Would you cycle that fuel cell O₂ heater switch three or four times.

Conrad Roger, Gemini V cycle it three or four times, and I am cycling it now, and I get no reading on the amp meter.

Hawaii Cap Com Roger. Would you give me a fuel cell O₂ quantity and tank pressure please.

Conrad Roger. It's 96 percent, and it's about -- it's situated between 55 and 60. It's been doing that pretty steady.

Hawaii Cap Com Roger.

Houston Flight Okay, let's have him go back to the power off condition with the expectation of, we want the two fuel cells left on and tell him we will contact him at California.

Hawaii Cap Com Roger.

END OF TAPE

5;

Houston Flight

This is Gemini Control Houston, six hours 22 minutes into the mission and we are just starting the fifth revolution. During the Texas pass just a few minutes ago the pilots brought up their IGS -- their initial guidance system power system inside the spacecraft and they received a DCS load, that's a digital command system load which updated all of their instrumentation for a landing should one be necessary on the sixth revolution. It would be premature at this time to say that we were going to come down during the sixth revolution in that area north of Hawaii that we've already identified because during the course of the Texas pass, flight director Chris Kraft got on the loop and talked to Pete Conrad and Gordon Cooper. They discussed the possibility of going another day in this powered down configuration. I'll emphasize that no decisions have been reached as yet terminating the mission or continuing it. We're still observing a very stable pressure in that oxygen bottle supplying the fuel cells. It's been at 60 pounds now for approximately an orbit and a half and no change observed here on the ground or in the spacecraft. The power to the fuel cell section too has been turned back on and will be left on for at least another half an orbit while the evaluation continues. We have the conversation

Cap Com Houston Roger. Understand that you got your computer on the line OK, and that you also got the second fuel cell on the line all right.

Conrad standing by for your load.

Cap Com Houston Roger. Texas go remote. California go local.

Texas: Texas air to ground is remotod. and telemetry valid.

Cap Com Houston Gemini V, Houston flight.

Conrad Come in, Houston flight. Gemini V, here.

Cap Com Houston Looks like we've got a situation here that is stabilized, Pete, and we've been discussing the problems associated with the purge. It looks like we can go a fairly long time without any purge. Secondly, it looks like we can purge with the hydrogen without any problems. In terms of the O₂ purge, we probably will do an on-off purge where we purge very briefly to not drain off the pressure. I would like your opinion on going through another day under those circumstances.

Conrad Well, it looks like to me, and if my feeble memory serves me right, we should have the used O₂ quantity plus getting a little pressure back, shouldn't we?

Cap Com Houston That's affirmative if we can ever get the O₂ quantity down to about 50 percent, we will probably be in real good shape, but that's going to take a long

time, and we are going to have to go a long while with you guys sitting up there doing nothing and taking the chance that the fuel cells are going to operate under these conditions for a long period, because we don't have but so much main batteries.

Conrad we also just got some DCS loads in.

Cap Com Houston Very good. That's a 6 - 4 load.

Conrad OK

Cap Com Houston OK, what do you think?

Conrad We might as well try it in that case.

Cap Com Houston OK. We will look at this thing for another orbit. Let's power down like you were before you came up over here, and let's also turn off that section 2 tower and turn off the clock again.

Conrad Will do.

Cap Com Houston Leave the DCS up.

Conrad OK, I'll put the computer off and leave the DCS up fuel cell.

Cap Com Houston Roger.

END OF TAPE

This is Gemini Control Houston, 6 hours 44 minutes into the mission. The Department Of Defense Recovery people in our recovery room here at the Mission Control Center in Houston, have advised that there are now 6 airplanes on station in the 6-4 area some 500 miles north of Hawaii. Those airplanes are as follows: 2 HC 97, 1 located 50 miles up range from the aiming point, another 50 miles downrange from the aiming point in addition, 2 Cl30 aircraft, one of these is 150 miles uprange, and slightly north of the track, another about 200 miles downrange from the aiming point. In addition, 2 more aircraft, telemetry aircraft and airplanes which will be used as communications points, and they will be operating within ten miles of the aiming point, should they become necessary. These airplanes are identified as HC 121 aircraft, two in number. We have had no change on our fuel cell situation here. The engineering detective game continues, a lot of discussion here in the Control Center and with experts out at the Cape, also at the McDonnell Company in St. Louis. This is Gemini Control at 46 minutes after the hour.

END OF TAPE

This is Gemini Control, Houston, 7 hours, 2 minutes into the mission. We still are watching the pressure in the oxygen cell and it's still standing at a firm 60. The Flight Director in consultation here seems to indicate right now that he's leaning toward continuing this flight for at least another day. That would mean that if he makes that determination which will be made during this orbit, possibly over Hawaii, that the mission would continue in this powered-down configuration which is a very low amp drain on the power system. The engineering guess, detective game continues. We have done things like orient the spacecraft toward the sun in an effort to put additional heat on that oxygen cell. We've cycled the switch several times, which should start the heater which supplies the pressure which forces the oxygen into the cell itself, all of that effect at this point. The engineers tell us that if the oxygen quantity were some where down the order of 50 percent (remember that's a long way from where it is right now, it's been running at a fairly steady 95 and 96 percent full) if it were down around 50 percent the reduction in supply would create a heating effect of its own that would be helpful in this situation. There is apparently no way to vent the oxygen to get down into that range of about 50 percent. With the spacecraft now beginning a sweep up across the Pacific on the fifth revolution, this is Gemini Control at Houston.

END OF TAPE

This is Gemini Control Houston, 7 hours 6 minutes into the mission and we have recycled our tape recorders, have a very brief conversation between the ground station at Tananarive and the spacecraft wrapped up and ready to play for you at this time.

Houston Flight Gemini V, Gemini V, this is Houston here. Bring up your UHF transmitter. Gemini V, Gemini V. This is Houston here. Bring up your UHF transmitter.

Houston Flight Gemini V, Gemini V. Houston here. Do you read.

Conrad We read you, Gemini V.

Houston Flight Roger, Gemini V. Houston here. You are coming through very garbled and weak. Can you give us your fuel cell O₂ pressure and quantity.

Conrad Roger. It is holding at 60 psi, and 96 pressure.

Houston Flight Roger, Gemini V. Understand it's holding... You can turn your transmitter back to standby. Thank you.

END OF TAPE

This is Gemini Control Houston, 7 hours 25 minutes into the mission. We have just had a brief interchange with the spacecraft in the Coastal Sentry Quebec parked in the far western Pacific. They are reporting no change in the pressure -- the oxygen pressure in the fuel cell area. The Flight Director advises that he will make a decision while the spacecraft is over Hawaii at which point it should be in a very, very few minutes. We have the tape of the CSQ-Gemini V conversation wrapped up and we will play it for you now.

Houston Flight Gemini V, Gemini V, this is Houston here. Bring up your UHF transmitter. Gemini V, Gemini V, this is Houston here. Bring up your UHF transmitter.

Houston Flight Gemini V, Gemini V. Houston here. Do you read.

Conrad Roger Houston, Gemini V.

Houston Flight Roger Gemini V, Houston. You are coming through very garbled and weak. Can you give us your fuel cell O₂ pressure and quantity.

Conrad Roger, holding at 60 psi, and 96 percent.

Houston Flight Roger, Gemini V. Roger, Gemini V. Understand it's holding. You can turn your transmitter back to standby. Thank you.

CSQ Cap Com Gemini V, Gemini V. CSQ Cap Com. Turn up your UHF transmitter and report fuel cell O₂ pressure please.

Conrad CSQ, Gemini V. 96 percent, 60 psi and we got your DCS update. Over.

CSQ Cap Com Roger. Copied. I transmitted a TM command to reset after Hawaii.

Conrad Roger.

Houston Flight What do you read in O₂ pressure.

CSQ Cap Com Spacecraft readout is 60 psi.

Houston Flight 6 what?

CSQ Cap Com 60 psi, and ground readout is 80 psi.

Houston Flight Roger, 80 psi. How many PCM counts is that?

CSQ Cap Com Stand by a moment. I'll advise him to turn off his UHF transmitter. We have nothing further.

Houston Flight Okay. That's okay.

CSQ Cap Com Gemini V, Gemini V, CSQ Cap Com.

Conrad Go ahead, Gemini V.

CSQ Cap Com Roger, we have you go on the ground, we have nothing further at this time. You can power down your UHF transmitter.

Conrad Roger.

END OF TAPE

This is Gemini Control, Houston, 7 hours, 39 minutes into the mission. The spacecraft is now in contact with the Hawaii station. In the last minute and a half the pilot and the command pilot have performed what is known as a hydrogen purge of the fuel cell. The effect of this is to flush an extra amount of hydrogen through the fuel cell. It is an operation which takes about 13 seconds on each section. We are not entirely sure if it had any effect, that is bringing that O_2 pressure up, or had any effect on the fuel cell operation. However, of major importance is the fact that the decision was passed up to the crew that we are committing for another day. I say again we are committing for a flight of at least 18 orbits, and we would hope to terminate it not less than an 18 - 1 area, the - 1 refers to a plan-landing area about 250 miles east of Bermuda. That time to retro-fire for an 18 orbit landing has been passed up. The spacecraft will remain in a powered-down configuration, and of course the oxygen pressure will continue to be monitored very carefully throughout the night and into early tomorrow. This is Gemini Control in Houston. We are still in contact in Hawaii, and we will go back and listen there a bit now. This is Gemini Control, out.

END OF TAPE

This is Gemini Control Houston, 7 hours 49 minutes into the mission. We are in touch with the spacecraft now over Guaymas, powering down, and we -- as we advised earlier, the decision has been made that we would commit for at least a one-day mission. We could, and I want to emphasize, go well beyond a 1-day mission, but we have no plans to terminate the mission at this time short of a 1-day mission. Hopefully, we will be able to solve our fuel cell oxygen source problem and continue the mission. We have the tape conversation where that commitment was made over Hawaii and its wrapped up and ready to play for you at this time.

Hawaii Cap Com Gemini V, Hawaii Cap Com.

Hawaii Cap Com Gemini V, Hawaii Cap Com. Would you bring up your UHF transmitter.

Conrad Roger, Hawaii, Gemini V.

Hawaii Cap Com Roger, we would like to perform a purge on your fuel cell H_2 . We do not plan to purge O_2 . We will not purge O_2 unless the O_2 pressure goes above 200 psi. Or, if there is a degradation in excess of 3/10 of a volt. Do you read.

Conrad Roger. I understand. You want to purge the H_2 but not the O_2 .

Hawaii Cap Com Roger. We are standing by for you to purge both sections of H_2 .

Conrad And you want me to leave the section 2 powered down.

Hawaii Cap Com That is affirmative. We are also going to copy your tape dump, Pete's too.

Hawaii Cap Com Gemini V, advise us when you start the purge.

Conrad I just purged the section 1 for 13 seconds. Stand by on my mark for purging section 2. MARK.

Conrad Hawaii, Gemini V. Do you have any readings on our ... CO₂ down there.

Hawaii Cap Com Stand by one. That reading is one. Repeat 1.

Conrad Ah, roger. I suspected some ... got in the gauge. It was out zero, then bounced up to about 7 or 8, and then went down, bounced back to zero.

Hawaii Cap Com Gemini V. Hawaii Cap Com. We have you go for 18-1. We would like you to go into only zone 1 areas. That will commit us to one day. I'm standing by to update your TR's for 18-1. Gemini V.

Conrad Roger, we'll bring it on the computer.

Houston Flight Negative. You don't need the computer for TR.

Hawaii Cap Com Gemini V, you've got a valid TR time. You are in sinc.

Conrad Roger.

Hawaii Cap Com Gemini V, we'd like you to stay in the present power configuration. That is your primary coolant pump on, 1 suit fan on, your DCS on, your UHF receiver on your dc-to-dc converter on, your OAMS heater circuit breaker off, and your water heater circuit breaker on. Do you read.

Conrad That is affirmative Gemini V. And you want us to keep the section 2 powered down. Is that correct.

Hawaii Cap Com That is affirmative. And we would like to purge the H₂ in both sections about every 6 hours from now on.

Conrad Roger.

Hawaii Cap Com Would you give me a fuel cell O₂ quantity and a fuel cell O₂ tank pressure.

Conrad Roger, at 96 and 60.

Hawaii Cap Com Roger.

Houston Flight Hawaii Cap Com, Houston Flight.

Hawaii Cap Com Go ahead Flight.

Houston Flight Roger, he didn't bring his computer in up there did he?

Hawaii Cap Com Negative, not that I know of.

Houston Flight Okay.

Hawaii Cap Com Flight, I've got about 30 seconds to LOS. I'm going to command a dump tape off. I've got most of the dump.

Houston Flight Okay. Check that --.

Hawaii Cap Com Gemini V, this is Hawaii Cap Com. I am unable to turn off your tape recorder. Request you turn it off. Gemini V do you copy.

Houston Flight Did you get your TX in Bill?

Hawaii Cap Com I couldn't get my tape dump in and I lost it.

Houston Flight Okay, I think CSQ got the TX and they should turn it off. CSQ, Cap Com Houston Flight.

Hawaii Cap Com Flight, I won't turn the tape recorder off.

Houston Flight It should, Bill, there is an interlock in there, Bill.

Hawaii Cap Com Okay. Roger.

Guaymas Cap Com (garble)

Houston Flight Guaymas Cap Com, Houston Flight.

Guaymas Cap Com Guaymas Cap Com.

Houston Flight • That medical pass is on the Pilot and the Command Pilot
has a medical pass over Hawaii on this next rev, so
we will get both of them, and we want also^{to}/get that
message for them to turn his -- make sure that the
heater switch position is in auto. on the O₂.

Guaymas Cap Com Roger, fuel cell O₂ heater to auto, and could you give
me a Hawaii AOS.

Houston Flight Hawaii LOS?

Guaymas Cap Com No, AOS for the next pass.

Houston Flight Next pass for Hawaii is 23 10 49. .

Guaymas Cap Com Okay, copy.

END OF TAPE

This is Gemini Control. The White Team, or second shift of Flight Controllers has taken over the direction of the flight from this Center. Flight Director Chris Kraft has been replaced by Director Eugene Kranz. Kraft and a number of his team have left the Control Center for a press conference at the NASA News Center in a few minutes. Just before leaving the Control Center, Kraft made a GO decision for 18 revolutions. The fuel cell situation remains as reported for the spacecraft with a low pressure situation. It is hoped, however, that we can continue this mission in a powered-down spacecraft. Continuing in a powered-down condition, means that some of the experiments will have to be foregone in the interest of completing the primary mission, which of course is, in a eight-day flight, the medical experiment. The medical condition of the pilots during this flight is of paramount importance. This is Gemini Control.

END OF TAPE

This is Gemini Control. We are 9 hours and 2 minutes into the flight of Gemini V. The spacecraft has just passed out of voice range with the Coastal Sentry Quebec, the tracking ship located in the Pacific Ocean south of Japan. The spacecraft is now in its sixth revolution of the Earth. There has been no change in the low pressure condition effecting the fuel cells. During the pass over the Coastal Sentry Quebec, the Flight Surgeon aboard ship took a medical pass from the Command Pilot aboard the spacecraft 5. This medical pass was complete with temperature, blood pressure, and exercise session followed by another blood pressure check. The Pilots aboard to spacecraft reported that the Command Pilot has had approximately 1 pound and 6 ounces of water. The Pilot, Charles Conrad has had an intake of 14 ounces of water to date. Both the Command Pilot and the Pilot are planning to eat now. This is Gemini Control.

The "White team" or second shift of Flight Controllers has taken over for direction of flight from this center. Flight Director, Chris Kraft has been replaced by Director Eugene Kranz. Kraft and a number of his team have left the Control Center and will report for a press conference at the NASA News Center in a few minutes. Just before leaving the Control Center, Kraft made a "go" decision for 18 revolutions. The fuel cell situation remains as reported aboard the spacecraft, with a low pressure situation. It is hoped, however, that we can continue this mission in a powered-down spacecraft. By continuing in a powered-down condition, this means that some of the experiments have to be forgone in the interest of completing the primary mission, which, of course, is an 8-day flight and the medical experiments and the medical condition of the pilots during this flight is of paramount importance. This is Gemini Control.

CSQ This is CSQ Cap Com, Gemini V. Gemini V, Cap Com and you are go on the ground - what is your status?

Conrad Here we go here, . . .

Conrad Roger

CSQ Would you give us a readout on your fuel cell O₂ quantity, Gemini V?

Conrad , psi pressure 60.

CSQ Gemini V, as long as we have a valid temperature - standing by for your blood pressure.

CSQ Surgeon Gemini V, CSQ Surgeon - cuff is not quite full scale. Gemini V, this is CSQ Surgeon, your cuff is full scale.

CSQ Houston Flight, this is CSQ.

Houston Flight Go, CSQ.

CSQ Roger, we gave him a "go" for 18-1. His onboard readout fuel cell O₂ pressure was 60 - quantity 96. . . readout pressure 90 - quantity 92. O.K. what's your PCM count?

Conrad Stand by.

CSQ Surgeon CSQ Surgeon, we have a good blood pressure - give me a mark when you begin exercise.

CSQ Houston Flight, CSQ advises . . still 17 - - 17. Roger.

CSQ This is CSQ, Gemini V - Be advised that . . the exercise on the mark 3 L 1 mark.

. . . . exercise. Standby for the blood pressure.

Roger.

CSQ Surgeon

Gemini V, CSQ Surgeon, cuff full scale.

Gemini V, CSQ Surgeon, we have a good blood pressure -
standing by for your food, water and sleep report.

Conrad

Roger. Tell the Surgeon that the Command Pilot has
drunk 1 lb and 6 oz of water and the Pilot has drunk
14 ounces of water and we have. . . . to eat
other than we both ate the bacon squares and a little
bite of the salad. . . and after leaving you, we
will eat our first meal.

CSQ Surgeon

Roger, I read that 1 lb 6 oz water for the Command Pilot
and 14 oz for Pilot. Both ate bacon squares - planning
to eat now.

Gemini V and we are approaching LOS, CSQ. Have nothing
further.

Conrad

O.K. Cap Com.

That was the taped voice conversation between the Coastal Sentry Quebec
tracking station and Spacecraft Gemini V. This is Gemini Control.

END OF TAPE.

This is Gemini Control. We are now 9 hours and 32 minutes into our flight. The spacecraft is now on its sixth revolution and approaching the west coast of South American. Medical data was received from the pilot, Pete Conrad, over the Coastal Sentry Quebec, and from the command pilot Gordon Cooper over Hawaii. Flight Surgeon Dr. DeWayne Catterson reports all medical sensors are working well. The flight team, he said, is in very good condition and their responses are excellent. During the pass over Hawaii, the command pilot Gordon Cooper, was asked if the Rendezvous Evaluation Pod was within visual range of the crew during their flight. He said "yes, it has been with them all along." We will now playback the taped voice conversation between spacecraft Gemini V and the Hawaii tracking station.

Conrad Hello Hawaii, Gemini V, are you reading?

CAP COM Roger, read you loud and clear. We are standing by for an oral temp on the pilot - we got one on the command pilot.

Conrad I just gave an oral - this is the pilot, I just gave an oral temp to the CSQ and I sent this order for the command pilot to give you the next temp and he's got his oral temp probe in now.

CAP COM Good show Pete. Could you have him start the blood pressure?

Conrad Okay, want a blood pressure, here it comes.

Conrad Have you got the temp on him?

CAP COM That's affirmative

Conrad Say again

CAP COM That's affirmative

Conrad Okay

CAP COM I'm going to copy a tape now.

Conrad Okay

Hawaii Flight This is Flight Hawaii. We read fuel cell O₂
quantity at 94 percent, tank pressure 71.2 the
PCM bit count is

Gemini V this is Hawaii Surgeon. The cuff is full-scale.

Cooper Gemini V

~~Hawaii Flight~~ We have a good blood pressure give me a report when
you begin your exercise.

Cooper Roger starting exercise now

Cooper Beginning exercise now

Gemini V Hawaii Surgeon. The cuff is full-scale

Hawaii flight We have good blood pressure, standing by for your
food and water report

Cooper Roger. We gave that over CSQ and it hasn't changed
since then. We're just getting ready to end it up
here and eat a big meal now.

Hawaii flight Roger understand. You gave a report to CSQ and you're
going to begin meal 1 for the day

Cooper That's roger.

CAP COM Gemini V Hawaii CAP COM

Hawaii flight Hawaii surgeon out

CAP COM Gemini V Hawaii CAP COM. Be advised that we will
update you on your landing areas and your Flight
Plan on your next pass over Hawaii

Cooper Okay, mighty fine.

CAP COM We'd also like to know if you've seen the flashing lights on the REP

Cooper Roger. That thing's right with us. It has been all along - been right out in back of us

CAP COM Okay

Houston flight What does he estimate is the range

CAP COM What do you estimate your range is?

Cooper Well it varies, it's cycling back and forth slightly but it's been in as close as about 1000 feet to us

CAP COM Roger

Hawaii flight Hawaii, Gemini V

CAP COM Go ahead

Hawaii flight We've seen it both in the daytime and at night

CAP COM Roger

Houston flight Okay. And during the next Rev if he happens to see it again we'd

Cooper From here we can see the tumble rate, see the dipole and everything on it.

CAP COM Roger. Go ahead flight.

Houston flight Roger. During the next Rev we'd like to get an indication.- some time indications as to when he thinks it's in max and mid-range. Roger. We'd like to know during the next Rev if he can give us some time facts, when he estimates it at max range and mid-range - certain times and see if he can correlate range to it.

CAP COM Roger.

Cooper I've had PCM LOS. I couldn't get the tape dump
off of the dump transmitter.

Houston flight Okay. You got your TX in, right?

Cooper That's affirmative.

Houston flight Okay.

This is Gemini Control. Spacecraft Gemini V is now passing over
approximately the middle of South America and is beginning its 7th
revolution of the earth. This is Gemini Control.

END OF TAPE.

This is Gemini Control. Spacecraft Gemini V is 10 hours and 2 minutes into its flight mission. It is now passing over South Africa. Our next voice transmission with the spacecraft will take place over Hawaii approximately 43 minutes from now. Meanwhile, here in the Mission Control Center, the atmosphere is somewhat relaxed during this period of no-communication with the spacecraft and with the spacecraft in drifting flight. Chris Kraft, our number 1 Flight Director, has returned to the Control Center and we also have 3 Spacecraft Communicators present. They are Deke Slayton, Buzz Aldren and Neil Armstrong. Flight Director, Gene Kranz, who is on duty now along with Chris Kraft, the Flight Directors, Paul Haney, the number 1 Voice of Gemini and other of the Flight Control Team have been having their heads together discussing what they will tell the spacecraft Pilot and Command Pilot when we have our next voice communication over Hawaii. At that time they will advise the Flight Team as to what they would like them to do on a real-time flight plan basis. And this has been the subject of discussion for the past few minutes.

I can see that Dr. Charles Berry, our medical director, has also returned to the Control Center and turning around and viewing the VIP viewing room, we find that there are very few people present. Dr. Robert Gilruth, our Center Director, and George Low, his Deputy, left here approximately $\frac{1}{2}$ hour ago. Some of the Flight Controllers are taking advantage of this relaxed time period to get a quick bite to eat. At this time, there is nothing much going on now except discussion as to what will take place and what we will tell the Flight Team on its next pass over Hawaii. This is Gemini Control.

END OF TAPE.

This is Gemini Control at 10 hours and 32 minutes into the Gemini V Mission. Our spacecraft is now passing over the Pacific on it's 7th revolution of the earth. The Coastal Sentry Quebec tracking ship has just passed along a GO condition to the Gemini V flight crew. Flight Director Gene Kranz, a few minutes earlier, decided to initiate a voice communication with the flight crew as it passed over the Tananarive Tracking Station. The conversation concerned Gordon Cooper's reported sighting of the Rendezvous Evaluation Pod. And we will now playback the voice conversation between the spacecraft and the Mission Control Center, which was remoted to the flight crew through the Tananarive Station.

This is Gemini Control.

CAP COM Gemini V, Gemini V, Houston CAP COM would you turn your UHF transmitter on.

(Station calling Gemini V)

CAP COM Roger Gemini V, Gemini V. This is Houston CAP COM. How do you read? Over.

Pilot Gemini V (Noise - garbled) Hello Houston, Gemini V

CAP COM Roger Gemini V. This is Houston. Could you give us some idea of the relative motion that you have with the REP now. Over.

Conrad Oh, good evening Buzz. How are you? I was just remarking that we ought to cheat it for a while. It seems to have been describing a sort of a figure 8 around us, most of the time when we have seen it it's been upon us and on the night side is when it got fairly close and when we came out into the day side a few orbits ago, why, it was quite close to

Conrad us, or close enough for us to see the dipole on it when it was tumbling and I haven't seen it for a while, we're just excited of course, and we have some fairly good range and we're moving around but I haven't located it this away.

CAP COM Okay Gemini V this is Houston CAP COM here. I was able to read you quite well on that for this site. What we'd like to do is to consider perhaps in the next several orbits bringing up your ACME power so that you can maneuver to keep it in sight a little bit more. We're also considering various means by which you might be able to close on it during the day side, this is all based on your electrical power system, of course. Over.

Conrad Roger. We're all for it. Power (garbled)
Confirm do you want us to leave this no. 2 fuel cell shut down, you want us to bring it back on at any time just to put a little load on it then take it back off again.

CAP COM Not yet Gemini. We're still considering this. Could you give us an idea what your projected crew rest cycle is going to be. Over.

Conrad Well, we're just a little bit behind on that, we've finished eating. Gordo is taking a vision test right now and then he's gonna go to sleep and I'm going to take the vision test and stay on station for 6 more hours.

CAP COM Okay. Understand.

CAP COM Gemini V Gemini V Houston CAP COM. On the last night pass did you notice any diminishing intensity in the flashing light. Over.

Conrad Not that we could gather Buzz, I've not seen it this pass though, that doesn't mean it's not out here but it was so close to us before, even though we couldn't see it, it would illuminate the spacecraft with the flashes and we knew it was around us all the time.

CAP COM Roger. Understand. The spec value on the battery lifetime for the lights expired about an hour or two hours ago.

Conrad Roger. Understand.

CAP COM Gemini V. Houston. We're about to have LOS here. We'll work up something and give you an update over Hawaii. Over.

END OF TAPE

This is Gemini Control. We are now 11 hours and 2 minutes into the flight of Gemini V. The spacecraft is now over the Pacific Ocean approaching the Western Coast of South America. During a voice communication with the Hawaiian tracking station about 8 minutes ago, Flight Director Gene Kranz, here in the Mission Control Center, passed on through that station instructions to the spacecraft crew for a limited test of the power system aboard the Gemini spacecraft. This test will consist of turning the power up on the onboard attitude control system and then checking carefully to see if a steady power level can be obtained. This test would not take place until the next pass over the Coastal Sentry Quebec or the Hawaiian tracking station on the next revolution, which is approximately 90 minutes from now. The Hawaiian tracking station also gave the Flight Crew some routine new data for various possible landing areas in the event that a contingency landing area becomes necessary. This is Gemini Control at 11 minutes and 3 seconds into the flight.

END OF TAPE

This is Gemini Control, at 11 hours and 15 minutes into the flight of spacecraft Gemini V. Our spacecraft at this time is passing over South America - the southern part of South America and is now beginning its eighth orbit - or eighth revolution of the earth. This is Gemini Control.

END OF TAPE

This is Gemini Control. We are now 11 hours and 32 minutes into the flight of Gemini V. The spacecraft is approaching the west coast of Africa - southern Africa and here in the Control Center things are in a relaxed mood. Many of the flight controllers have left their consoles briefly to pick up a sandwich, and a cup of coffee and have brought them back to the console and are partaking of an evening meal. Here we are also awaiting the spacecraft which will be approaching the Hawaiian Tracking Station in approximately 20 or 30 minutes and we are awaiting the power-up test which has been decided upon by Flight Director Eugene Kranz in an attempt to get a steady reading and if this steady reading is obtained we may do some of the onboard experiments that we have programed.

This is Gemini Control at 11 hours 33 minutes.

END OF TAPE

This is Gemini Control at 12 hours and 2 minutes in to the flight of the Gemini V spacecraft. Our flight team is now passing over the continent of Asia on its eighth revolution over the earth. In just a few minutes the Coastal Sentry Quebec tracking ship, located in the Pacific south of Japan, will have voice contact with the spacecraft. Flight Director Gene Kranz has been receiving additional data from the tests of fuel cells that is going on in St. Louis and also more data from the engineers here in the Mission Control Center. He will very shortly make a decision on his plan to power up the spacecraft, the Attitude Maneuver System aboard the spacecraft, and thus check the power level - the pressure level around the fuel cells. This is Gemini Control.

END OF TAPE

This is Gemini Control at 12 hours and 32 minutes into the mission. The spacecraft passed over the Hawaiian tracking station in its eighth revolution over the earth just a few minutes ago. During voice communication with the spacecraft, Hawaii advised pilot Pete Conrad to power up the Orbital Attitude Maneuver System and then to do a 360 horizon sweep by turning his spacecraft completely around. He was advised that if he could see the rendezvous evaluation pod he should stabilize the spacecraft at that attitude and turn his power down. If he did not see the REP he should then choose an attitude and again power the spacecraft down. Conrad asked, jokingly, if anyone here had a suggestion as to where he should look for the REP. Flight Director Gene Kranz recommended that he look due south. At that time we had a loss of signal and the next voice communication will be with the Rose Knot Victor tracking ship, coming up in about 15 minutes. We should have then a report on whether pilot Pete Conrad was able to spot the REP. Here in the Mission Control Center, Bob Gilruth, Director of the Manned Spacecraft Center, and George Low, his Deputy Director, along with Chuck Mathews, the Project Manager of Project Gemini, are back in the viewing room and are interested

spectators at this time. Everyone is awaiting the next pass over the Rose Knot Victor to see what results we have had with this latest attempt to stabilize the power aboard the spacecraft. At this time, we will play back the voice tape of the conversation between the Hawaiian tracking station and the Gemini V spacecraft. This is Gemini Control.

CAP COM Gemini V, Hawaii Cap Com. Bring up your UHF transmitter, and power down the D-4, D-7 experiment.

Conrad Roger. We are powered down on the experiment. We just powered up.

CAP Com Roger. We're going to scrub it. I'd like an open circuit readout of stacks 2A, 2B, and 2C.

Conrad Roger. They're clear off the peg - I can't even read them.

Cap Com Roger. Copy, Flight?

Flight Roger, we copied. 2A, 2B, -

Conrad No, 1A, 1B, and 1C all dropped about two tenths of a volt.

Cap Com What are they reading?

Conrad They read 27.8.

Cap Com Roger.

Conrad We're ready to power up the ACME as instructed by RKV if you're ready.

Cap Com Ok, we'd like to do it - - but first would you bring up the AC power switch to ACME?

Conrad Roger, AC power switch is ACME.

Cap Com Ok. Bring up the ACME bias power switch to primary.

Conrad Roger. It's primary.

Cap Com Are you monitoring your fuel cell O₂ tank pressure?

Conrad Yep.

Cap Com Ok. Let's watch it close and if you see any decrease, power back down. We'd like you to go to attitude mode switch to pulse at this time.

Conrad Roger, it's in pulse.

Cap Com How about your OAMS attitude control power switch to ON?

Conrad Ok. It's on.

Cap Com Ok, we don't want to power up the secondary coolant loop - we want to evaluate this configuration first. We'd like you to do a 360 and take a look for the REP. If you see the REP, we recommend that you stabilize your rates and then power down.

Conrad Ok.

Cap Com If you don't see the REP, go ahead and stabilize in whatever attitude you'd like.

Conrad All right.

Cap Com Did you copy all that, Flight?

Flight That's affirmative, but whenever he picks his attitude to stabilize if he doesn't see the REP, he should pick an attitude and then power it up again.

Cap Com Roger, he's going to do that.

Cap Com Houston Flight, Hawaii Cap Com.

Conrad Hawaii Cap Com, Gemini V.

Cap Com Go ahead, Gemini V.

Conrad Have you got any suggestions as to where to look for it?

Cap Com You're closer to it than we are.

Conrad Thanks a lot, Bill.

Cap Com Any time, Pete. Flight, Hawaii.

Flight Roger. The REP would probably be to his south - due south.

Cap Com Flight recommends you look south for it - due south.

Conrad Ok.

Cap Com Flight, we're reading 13.5 on main current. When we brought the AC switch up to ACME we went to 14.5. When we brought the bias power to primary we were still at 14.5. When we brought the OAMS attitude control power switch to ON we went to 15 and it remained at 15 when we went to attitude mode to pulse.

Flight Good report.

Cap Com Ok. Did you get that thing on the off the circuit voltages?

Flight Affirmative. I assume they were off scale high.

Cap Com Off scale high - they were off the peg. 1A, 1B and 1C were reading 27.8. The bit count is 17 and 18 -it's very similar to what the CSQ copied.

Flight Ok. You can advise the crew we would like the time at which he powers down his attitude control.

Cap Com Would you give us the time when you power down your attitude control?

Conrad Yeah, we haven't powered it down. We're still looking for the REP.

Flight Ok. He can give the time to us at the RKV in about 20 minutes.

Cap Com Ok. You'll be over the RKV in about 20 minutes. You can pass the time along to them.

Conrad Ok. Don't you want us to stay in this configuration as long as the pressure doesn't drop?

Flight That's negative.

Cap Com That's negative. We want you to power down as soon as you stabilize.

Conrad Ok.

Cap Com Ok, Flight. We copied the tape dump. I've just
turned the recorder off and the carrier off. We've
got the TX in.

Flight Roger.

Flight Hawaii Cap Com, Houston Flight.

Cap Com Roger.

END OF TAPE

This is Gemini Control at 13 hours and 2 minutes into our mission. Spacecraft Gemini V is now approaching the west coast of Africa on its 9th revolution around the earth. Our last voice communication with the spacecraft took place about 10 minutes ago as the spacecraft passed over the Rose Knot Victor, a tracking ship off the west coast of Peru. At that time Pilot Pete Conrad advised that he had performed a 360 degree horizon sweep by turning the spacecraft around. He failed to see the REP which he was looking for and so he powered-down the spacecraft again. Conrad also performed a fuel cell hydrogen purge. Flight Surgeon Dr. DeWayne Catterson reports that the medical condition of the crew at this time is excellent.

This is Gemini Control.

We will now play back the voice tape communication between the Rose Knot Victor Tracking ship and the Gemini V spacecraft.

CAP COM Gemini V RKV CAP COM. Bring up your UHF transmitter.

CAP COM Gemini V RKV CAP COM. Bring up your UHF transmitter.

Conrad RKV CAP COM Gemini V here

CAP COM Roger. Your systems are GO on the ground, we'd like to have the time of your attitude control power-down.

Conrad 27, 25

CAP COM 27, 25. Understand.

Conrad Affirmative 02 27 25

CAP COM Did you see the REP at any time?

Conrad That's negative.

CAP COM Roger, understand. Were you able to damp out your rates pretty well?

Conrad That's affirmative.

CAP COM Roger. Understand. You have a Medical Data Pass on the Pilot coming up over the CSQ on this rev, the next rev at a time of 03 hours, 30 minutes, 11 seconds as acquisition.

Conrad Roger. Medical Data period 03 30 11 over the CSQ.

CAP COM Roger. That's the acquisition at CSQ.

Conrad Right.

CAP COM We want to do a hydrogen purge on both sections at 2 hours, 45 minutes, 00 seconds. That's about 2 minutes from now.

Houston Flight Why don't you let him start his hydrogen purge now if he's ready.

Conrad Roger. My purge 02 45 00.

CAP COM Gemini V RKV CAP COM. They said we can go ahead with it at this time, are you ready?

Conrad Okay. Crossover valve is open - standby on my mark, I'll purge no. 1 - mark.

CAP COM Roger. We have it on the ground.

Conrad It now is terminated at 13 seconds stand by on my mark - mark.

Conrad I've got no. 2 was purged - crossover valve is mark

Houston Flight RKV CAP COM Houston flight.

CAP COM Go Houston Flight

Houston Flight Roger. I gave you the wrong time on that CSQ acquisition. That's 03 38 11

CAP COM Roger. Understand

CAP COM Gemini V. RKV CAP COM

Conrad Go ahead, RKV

CAP COM I have a correction for you on the acquisition
time at the CSQ

Conrad Ok, ready to copy

CAP COM 03 hours, 38 minutes, 11 seconds.

Conrad Okay. Acq at the CSQ is 03 plus 38 plus 11

CAP COM Roger

Houston Flight Why don't you get an evaluation of his onboard
systems at this time?

Conrad in our oxygen pressure

CAP COM Roger, I understand.

Houston Flight How about the rest of his

Conrad pressure is 400 now, it's built up and
it has seemed to stabilize at count rate of 400

CAP COM Roger, I understand

Houston Flight How do the rest of his systems look onboard?

CAP COM Gemini V, how do the other onboard systems look?

Conrad Everything else is GO.

CAP COM Roger.

Houston Flight Okay. You can advise him to power-down his UHF
transmitter.

CAP COM Roger. Gemini V you can power-down your UHF trans-
mitter to STANDBY at this time and we'll be standing
by in case you need anything.

Conrad

Roger.

END OF TAPE

This is Gemini Control at 13 hours and 37 minutes into the mission. Spacecraft Gemini V is approaching the Coastal Sentry Quebec, our tracking ship in the Pacific Ocean. Our orbital values at this time are - apogee, 214 statute mile and perigee, 105 statute miles. The spacecraft is in drifting flight. Command pilot Gordon Cooper is still in a sleep period that started a little over two hours ago. Flight Surgeon Dr. Duane Catterson tells us the crew is in excellent condition. They are on the scheduled flight plan with regard to medical experiments and data reporting. We will now give you the live voice transmission between the spacecraft and the tracking ship Coastal Sentry Quebec.

Cap Com Gemini V, CSQ Cap Com

Cap Com Gemini V, CSQ Cap Com, bring up your UHF transmitter.

Cap Com Roger, Gemini V. Advise this is a UHF number 6 call, and verify the fuel cell panel circuit breaker is closed.

Conrad Fuel cell circuit breaker switch is closed.

Cap Com All right. We'd like you to turn on the OAMS heater circuit breaker, and leave it on till the RRV pass.

Conrad (Garbled)

Cap Com Roger - affirmative.

Cap Com Stand by one. Gemini V, if you notice any decrease in the fuel cell O₂ pressure, turn off the OAMS heater circuit breaker.

Conrad Roger.

Cap Com And Houston advises the EA curve on section one indicates the performance is normal - and section two also indicates normal from open circuit voltages. The plan at this time is to keep all systems operating with limited power available. Do you copy?

Conrad Gemini V, We copy.

Cap Com Gemini V, advise we have received temperatures. Standing by for blood pressures.

Cap Com Say again - you had a little background noise.

Conrad I said it's much better with the temperature probes out.

Gemini V Garbled.

Cap Com Gemini V, we have a good blood pressure. Give me a mark when you begin exercise.

Conrad Roger. Gemini V, Mark.

Flight CSQ, this is Houston Flight.

Cap Com Flight, this is CSQ.

Flight Roger, Ted. We need another main summary.

Cap Com Repeat that, Flight?

Flight We need another main summary.

Cap Com Roger. Gemini V, CSQ . . . your cup is full . . .

That was the live voice transmission conversation between space-
craft Gemini V and the Coastal Sentry Quebec tracking station
in the Pacific. This is Gemini Control.

END OF TAPE

This is Gemini Control. Spacecraft Gemini V is now approaching the west coast of South America and is beginning its 10th revolution around the earth. At the present time the pilot, Pete Conrad is in an eating period and command pilot Gordon Cooper is still in his sleep period.

This is Gemini Control.

END OF TAPE

This is Gemini Control at 14 hours and 32 minutes into the mission. Our spacecraft at the present time is passing into the south Atlantic - over the south Atlantic, and shortly will come up on the Ascension Island tracking station. We have had a food and water consumption report from the pilot, Pete Conrad. He said he had taken four pounds of water, approximately, and is on his second meal. In the Control Center, Flight Director Nombèr One, Chris Kraft, and our present man on duty, Eugene Kranz, along with John Hodge, who will shortly take over direction of this flight, had a brief consultation. The decision they made was to power up the spacecraft periodically while carefully monitoring the pressure on the fuel cell. If this pressure remains steady, while they are pulling additional amps, they will attempt to perform some of the onboard experiments. The decision on exactly what experiments are to be performed will be made as the flight progresses. At the present time, the pressure on fuel cells is 76.2 pounds per square inch and we have 95.7 percent of oxygen aboard. This is a slight rise in pressure and is contributing to the decision to attempt to pull a little bit of amperage out of the power supply. This is Gemini Control.

END OF TAPE

This is Gemini Control - 15 hours 2 minutes after lift-off. Gemini V spacecraft is now over West Pakistan on a ground track that will take it over the Himalayan Mountains, Chunking China, and Taipai, Formosa. No contact was made with the spacecraft during the passes over the Ascension Island and Kano, Nigeria tracking stations.

Here in Mission Control, the blue team of flight controllers, headed by Flight Director John Hodge has relieved the white team led by Eugene Kranz.

This is Gemini Control.

This is Gemini Control. 16 hours 32 minutes after lift-off. The Gemini V spacecraft is now over northern Arabia midway through the 11th revolution. During a Medical Data Pass for Command Pilot Cooper over the tracking ship Rose Knot, Cooper reported that he had had two hours of quite good sleep that he was eating his first full meal and that he had consumed 3 lbs of water. The surgeon aboard the Rose Knot also took telemetered blood pressure readings on Cooper. While passing over the voice remoting station on Ascension Island, the crew of Gemini V received times for a visual acuity experiment from the spacecraft communicator here in Mission Control. The spacecraft will be in range of the tracking ship Coastal Sentry 14 minutes from now. We now have a tape on the air to ground communications with the Ascension Island Tracking Station.

This is Gemini Control.

CAP COM Gemini V, Houston CAP COM. Do you read?

Cooper This is Gemini V. Reading you loud and clear.

CAP COM Roger. Put your ACME power to ACME, your ACME bias PRIMARY, attitude to PULSE, and OAMS attitude power on. Do you copy?

Cooper Roger.

CAP COM Roger. You ready to copy experiments?

CAP COM Gemini V, are you ready to copy the experiments?

Cooper Roger. Go ahead.

CAP COM Roger. S-8, D-13, at 01 06 20 00. Sequence no. 02. Cabin lighting at 01 06 40 00. And be advised we'll pass you more data over the CSQ, which has an acquisition time of 01 06 46 21. Do you copy?

Cooper Didn't get the acquisition time 01 06 what?

CAP COM 01 06 46 21

Cooper 46 01?

CAP COM Roger. 01 days, 06 hours, 46 minutes, 21 seconds

Cooper Roger.

CAP COM And you can power-down your UHF on the way. We'll
 give you a call at the CSQ

Cooper Roger.

END OF TAPE

This is Gemini Control. 16 hours 50 minutes after lift-off. We have a tape recording of the Gemini V spacecraft pass over the Kano, Nigeria voice remoting station in central Africa. Let's listen to that tape now. This is Gemini Control.

Cooper Gemini V ...

CAP COM Gemini V this Houston CAP COM. Like to give you a short briefing on what we think your status is. Are you ready?

Cooper Roger

CAP COM We believe you have a two-phase condition in the oxygen tank now, Gordo, and that the pressure will continue to rise slowly, we believe we can bring on more power without jeopardizing this, and we plan to do so gradually and appreciate it if you'd keep us informed on that.

Cooper Roger. Will do.

CAP COM This pulse-mode will give you a little something to work with there for a change.

Cooper Roger.

CAP COM Gemini, could you verify if your Agena control circuit breaker is closed?

Cooper Roger. Agena control is closed.

CAP COM Roger. Thank you.

CAP COM Gemini V Houston CAP COM. If your OAMS gets sluggish, well go ahead and turn it off and we'll watch it carefully, but if it's all right you can go ahead and use it.

Cooper

Ok.

CAP COM

Gemini V Houston here. You can turn your UHF transmitter off and we'll be standing by with the CSQ.

CAP COM

Gemini V Houston. If you copy you can turn your UHF transmitter off and we'll talk to you over the CSQ, and we're standing by, no need to acknowledge.

That concludes the tape of the voice recording between the spacecraft Gemini V and the Kano, Nigeria voice remoting station out of Houston Mission Control. This is Gemini Control.

END OF TAPE

• This is Gemini Control. 17 hours 2 minutes after lift-off. Gemini V spacecraft is now over the Solomon Islands in the southwest Pacific and in 24 minutes will be in contact with the tracking ship Rose Knot off the west coast of Peru towards the end of the 11th revolution.

This is Gemini Control.

END OF TAPE

This is Gemini Control. 17 hours 32 minutes after lift-off. The Gemini V spacecraft is now almost directly over the tracking ship Rose Knot at the end of the 11th revolution. The next tracking station to acquire the spacecraft will be Canary Islands 17 minutes from now. After passing the Canaries, it will be 1 hour and 12 minutes before Gemini V is in contact with the tracking station, the Rose Knot again, at the end of the 12th revolution. At this period of the flight, station contacts become farther apart because the earth's rotation moves the tracking network eastward and away from the spacecraft's inertially-fixed orbit. The network moves again under the orbital track starting with the 16th revolution or the beginning of the second day and each day thereafter. The Command Pilot reported to the Rose Knot that he had not seen the REP lately. This is Gemini Control.

This is Gemini Control 18 hours and 2 minutes after lift-off. The Gemini spacecraft is not over Bengazi, Libya, in North Africa, on a track that will carry it over the cities of Beirut, Lebanon, Saigon, South Vietnam.

The spacecraft communicator aboard the tracking ship Rose Knot reported to Mission Control here in Houston that the ship's captain visually sighted the Gemini V spacecraft at sunset yesterday as it came over the western horizon. During the pass over the Canary Island tracking station, 13 minutes ago, the crew received flight plan updates from the Canary Island spacecraft communicator. This is Gemini Control.

END OF TAPE

This is Gemini Control, 18 hours, 32 minutes after lift-off. The Gemini V spacecraft is now crossing the north coast of Australia, just east of Darwin. Pilot Conrad is scheduled to be asleep at the present time. The next station to be in contact with Gemini V is the tracking ship Rose Knot, 29 minutes from now. This will be the Rose Knot's last contact with Gemini V until this afternoon. We now have a tape recording of the pass earlier in this revolution over the Canary Island station. Let's listen to that tape now.

Cap Com Canary Cap Com. Flight, this is Canary Cap Com.

Is he going with the transmitter powered down?

Flight Roger.

Cap Com Ok.

Flight Canaries, this is Houston Flight.

Cap Com Roger, Flight.

Flight Will you tell him that he can use the . . .

Gemini V (Came in over Flight)

Flight As he wants to. I'd like to turn them on over the site here so that we can get another power point and then turn them off and use them when he wants to.

Cap Com Roger. Flight, I didn't quite copy - Gemini V came in on the top of you.

Flight Roger.

Gemini V (Still coming in on Flight)

Cap Com Roger, Gemini V, stand by for one second here. Go ahead, Flight.

Flight Tell him we want to turn the horizon scanners on so that you can get another power point and from then on he can use them

as he wants to.

Cap Com Roger, copy. Gemini V, Flight advises that you can turn the horizon scanners on so we can get another power point, and he also advises that you can use them as you wish.

Cooper Roger, understand can turn on horizon scanners.

Cap Com That's affirmative.

Cooper Roger, thank you.

Cap Com Ok. I also have a flight plan up-date for you when you're ready to copy.

Cooper Ok.

Cap Com Roger. We have a B-4, D-7, sequence 421. Remarks - if towering cumulus clouds appear, make B-4, D-7 scanner without the warm-up.

Cooper Roger, I have that.

Cap Com Ok. And then at 01 days 12 hours 10 minutes, on rev 14, at longitude 117.6 degrees west

Cooper Roger. Will you give that one again -. I cut out on that one.

Cap Com Roger. That was 01 days 12 hours 01 minutes, that was rev 14, longitude 117.6 degrees west

Cap Com Roger.

Cap Com All right, Gemini V. I've been advised here that I gave you incorrect number - that was 12 hours 10 minutes

Cooper Roger. 12 hours and 10 minutes, understand.

Cap Com Roger

Cap Com We have nothing else for you at this time. We are standing by.

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Cooper Roger. Be advised flight plan sequence 08 of S-6, we
 had no success on it. Over.

Cap Com Roger.

END OF TAPE

The Gemini V spacecraft is now over the south central Pacific approaching acquisition by the tracking ship Rose.Knot at the end of the 12th revolution. Mission Control will be in contact with Gemini V through voice remoting at Antigua 10 minutes from now. Canary Islands will make contact with Gemini V 11 minutes later. A Rose Knot spacecraft communicator will pass up to the Gemini V crew routine landing area updates. This is Gemini Control.

END OF TAPE

This is Gemini Control, 20 hours and 2 minutes after lift-off.

Gemini V spacecraft which is now approaching the northwest coast of Australia on a track that will pass over the city of Brisbane and is now in radio contact with the Carnarvon, Australia tracking station. During the recent pass over the Canary Islands tracking station, a voice remoting test was made through that station from the spacecraft communicator here in Mission Control. We now have a tape of the voice communications during the Canary Islands pass. Let's listen to that tape now.

Cap Com John wants to talk over the fuel cells with you. Here he is.

Cap Com I see you are real busy right now, Pete, have you got a minute?

Conrad Gordo is taking a picture here of the Apollo landmark.

Cap Com Are you free to talk to me?

Conrad Go right ahead and talk.

Cap Com O.K. Electrical system - it looks like the pressure is holding. We are trying to give you back the most useable functions as quickly as we can. We are trying to approach a normal status operationally. Want you to keep monitoring the pressure - I'm sure you will. We believe your attitude indicator switch with FDI is on - we suggest you turn that off - we think there are more useful ways to use that power. We are trying to get

back to an essentially normal flight plan. We have some tracking on the REP and we are trying to cook up a possible rendezvous. Do you have any visual contact with it at all? We believe it's about 75 miles ahead of you.

Conrad . That's just maybe, we haven't seen it. Both of our FDI switches are off.

Cap Com We are not going to purge the oxygen at this time. We are going to look at the voltages some more on that. We are planning ahead for a 33-1 Go-No-Go and we will need the computer on for update at that time so we are trying to build your current up to a level that we could use the computer. We may trade off some items to get the computer on at that time. We hope to get the other fuel cell back on eventually. Do you have any other questions or comments?

Conrad No, my only one was when we were gonna get the fuel cell back.

Cap Com I'm working on it.

Conrad Thank you, buddy.

Cap Com See you.

Conrad Right, good show.

END OF TAPE.

This is Gemini Control - 20 hours 32 minutes after liftoff. The Gemini V spacecraft is now over the south central Pacific on a track that will pass across the republic of Panama. We now have a tape of voice communications between Gemini V and Carnarvon tracking station earlier in this 13th revolution. Let's hear the tape now.

Carnarvon Surgeon. Gemini V, Carnarvon Surgeon. Houston Surgeon is a little concerned about your lack of sleep. We'd like a status report on each of you at this time concerning fatigue level. Over.

Conrad Roger. We have just been cat napping - about 40 minutes on and 40 minutes off and 40 minutes on and 40 minutes off.

Carnarvon Surgeon Roger. You have a busy flight plan ahead. We recommend you try to sleep during your programmed sleep periods if you can so as not to get behind on the fatigue curve. Carnarvon Surgeon out.

Conrad We're trying to but you guys keep giving us something to do.

END OF TAPE.

This is Gemini Control, 21 hours, 2 minutes since lift-off. The Gemini V Spacecraft is now over the Madeira Island group in the east Atlantic, just west of Casablanca on a track that will pass over the Arabian city of Mecca, and directly over the Carnarvan, Australia, tracking station. The command pilot is scheduled to waken the pilot at this time and brief him on spacecraft status and events occurring during his sleep period. Canary Islands spacecraft communicator reported to the spacecraft that all systems looked good on the ground during the recent pass over Canary Islands. This is Gemini Control. *

END OF TAPE

This is Gemini Control, 21 hours, 32 minutes after lift-off. Gemini V spacecraft is now over the eastern Indian Ocean and should be in voice and telemetry contact with the Carnarvan, Australia, tracking station at this moment. Both pilots are scheduled to eat at this time, midway through the 14th revolution. This has been an exceptionally quiet night here in Mission Control, hopefully things will pick up somewhat during the next twelve hours. This is Gemini Control.

Is now over the Society Island group in the south central Pacific. During the pass over the Carnarvon, Australia tracking station, Pilot Conrad reported seeing the lights of Perth, and jokingly said he could see the Carnarvon station itself. We have a tape of the voice conversation between Gemini V and the Carnarvon station. Let's hear the tape now.

Conrad Carnarvon, Gemini V, how much time do we have over you?

Carnarvon Cap Com We got about 3 minutes to go.

Conrad Now are we supposed to be passing to the north of you now.

Carnarvon Cap Com Stand by one.

Houston Flight That's affirmative.

Carnarvon Cap Com That's affirmative, Gemini V.

Conrad Are you guys clear down there.

Carnarvon Cap Com Roger, we've got clear skys and an optical sighting of the spacecraft.

Conrad Okay, we see you.

Carnarvon Cap Com Very good.

Conrad We see you, and we see Perth, but I don't see Geraldton. Looks like its under the clouds.

END OF TAPE

This is Gemini Control, 22 hours and 32 minutes after lift-off. The Gemini 5 spacecraft is now over the central Atlantic and will be in acquisition by the Canary Island tracking station momentarily. A medical data pass will be run on the pilot during the pass over the Canarys. Here in Mission Control, the red team of flight controllers, headed by Chris Kraft, is now taking over from the blue team, headed by John Hodge. The blue team has been in the control room since 10 p.m. Central Time last night. We have a tape of the just-completed pass over the state-side stations. Let's hear the tape now.

Houston Cap Com Gemini 5, Gemini 5, Houston Cap Com. If you read, place your adapter C-band to "continuous".

Conrad We read you loud and clear, over.

Houston Cap Com Roger. Reading you five square. Did you copy on the C-band?

Conrad Roger. C-band appears to continue.

Houston Cap Com Roger. Understand, thank you; and be advised that the pilot has a medical data pass over the Canarys, that your acquisition time is 12, 32, 47.

Conrad Roger. 12, 32, 47.

Houston Cap Com Roger. That's today. Morning, Gordo.

Cooper Morning.

Houston Cap Com How are you feeling?

Cooper Fine.

Houston Cap Com I'm going to talk to you about what we are going to do here with the computer and the fuel cell.

Cooper

Houston Cap Com Gemini 5, Houston here. Would you put your fuel cell
O₂ quantity on, please.

Cooper: Roger. Will do.

Houston Cap Com Gordo, on the next pass over the States what we want
to do is bring up the computer and give you a DCS load
for 18 - 1, and then take a look at the computer
memory to make sure we've got the right numbers in
there. We're a little bit concerned -- last time we
had a poor telemetry read out of the numbers.

Cooper OK.

Houston Cap Com Then after we've done that, and we are satisfied
that -- what we'll do before we bring the computer up
is drop some of the other things off the line so that
the total amperage is about the same. Then after
we've checked the computer, over one of the next sites
you pass over we'll have you turn off the computer
after your contact here, and then we'll bring that
second section back on the line and see how that
works.

Cooper OK.

END OF TAPE

This is Gemini Control Houston, forgive the delay. Our weatherman this morning is giving us a good report for the next 24 hours. He says that in that period of time the West Atlantic area will be partly cloudy with light winds, less than 10 knots and waves less than 3 feet. The East Atlantic area, about 300 miles west of the Canary Islands, normally steady trade winds of about 20 knots with waves of 5 to 7 feet will hold forth beneath partly cloudy skies and a hazy atmosphere. For possible landings in the mid-Pacific, about 500 miles north of Honolulu, fair weather will continue except for isolated light showers. Winds will be from the east and average 10 to 15 knots. In the far West Pacific area, some 500 miles southwest of Tokyo, Typhoon Lucy is moving over the Japanese Islands and the weather conditions will be improving in the Western Pacific landing area during the day. During the next 24 hours winds will subside to about 15 knots and waves to about 5 to 6 feet. Scattered heavy rain squalls will be diminishing. Significant other weather features which the flight will pass over around the world in the next 24 hours include a suspicious area of tropical weather in the Atlantic between Puerto Rico and West Africa that may yet evolve into something more -- of more concern. The tropical storm Doreen is moving westward in the Pacific Ocean. It is now about 1000 miles south of San Diego. The -- as the Red Team took its places this morning -- it found a very elated Flight Control Team. The source of the elation, of course, was a successful oxygen purge of the oxygen supply tank in the -- which supplies the fuel cell -- the oxygen commodity. This purge was

was performed during the -- past our orbit over Carnarvon. It seemed to have no degrading effect at all on the fuel cell and on the other hand the pressure reading in the fuel cell went up 10 pounds, a very favorable turn of events. We are now running with approximately twice the amp load that we were using yesterday during our maximum powered-down period. We have a taped conversation between the Canary Island station and the Gemini 5 spacecraft, which is -- we are prepared to play for you now.

Canary Cap Com Gemini V, this is Canary Cap Com. We are standing by for blood pressure on the Pilot.

Canary Cap Com Flight, we have negative on the oral temp.

Houston Flight Say again.

Canary Cap Com We did not get an oral temp on the Pilot.

Houston Flight Rog.

Canary Cap Com Gemini V, Canary Surgeon. Your temp is still scale.

Canary Cap Com Flight, we have a solid C-band track.

Houston Flight Roger, solid C-band track.

Canary Cap Com Gemini V, we have a good blood pressure. Give me a MARK when you begin exercise.

Conrad Gemini V, MARK.

Canary Cap Com Standing by for blood pressure.

Conrad RCS ring D source pressure, PCM count 150. We are still counting 19 on fuel cell O₂.

Canary Cap Com Gemini V, we have a good blood pressure. Standing by for your water and sleep reports.

Conrad This is the Gemini V Pilot. The water is up around $5\frac{1}{2}$ pounds, now total. And I got to rest back about an hour ago when they told us to sleep. And I had a little cat nap just a little while ago.

Canary Cap Com Roger, Gemini V. Everything is looking good here on the ground. We have about $2\frac{1}{2}$ minutes to LOS and we are standing by.

GEMINI 5

Tape 87 and 88 we do not have.

coolant loop, and place the fuel cell section 2 power switch on. OK, after section 2 is on line, power-up the ACME and horizon scanners. They want to complete this before ...LOS to have a look at section 2.

Conrad .OK. Let me see if I got all this. At Guaymas AOS, 1346, approximately. Assume the 000oor 0180 attitude, ohms heater off, the ACME off, the scanners off, bring the IGS on, bring the computer on, on ground command after receiving a load, power-down, bring up the secondary coolant loop, the number 2 fuel cell, bring the ACME back on the line, and our horizon scanners.

Canarvon Cap Com OK. On that power-down at Guaymas, also turn the, place the C-band adapter to command, in addition to heaters, ACME, and horizon scanners.

Conrad Got it.

Canarvon Cap Com OK, and on the IGS and computer power-down wait for a ground cue.

Conrad OK, now.

Canarvon Cap Com Go ahead.

Conrad I was just looking at the flight plan here. We'll have to cancel that D-6.

Canarvon Cap Com That's affirmative.

Conrad And we'll have to cancel both D-6's, or no, the D-6 and the D-4, no we might get the D-4 and D-7.....

Canarvon Cap Com Right, flight advised to scrub the D-6 experiment at 13 hours, 58 minutes.

Conrad OK.

Canarvon Cap Com OK. We are scheduled also for an H₂ purge over this station at this time. Would you give me a mark when you start your purge?

Conrad OK. Stand by. Stand by, purging no. 1. Mark. Ten seconds, didn't get it. Stand by, mark. No. 1 section, I read you purge complete. Stand by. Mark. No. 2's ready.

Canarvon Cap Com Roger.

Conrad No. 2 complete, both are off.

Canarvon Cap Com Roger. OK, we..... on the ground, Gemini.

Conrad Go, up here.

END OF TAPE

This is Gemini Control Houston, 24 hours, 2 minutes into the flight and we have just started the 16th revolution. We are still in contact with the spacecraft, its out on the edge of the Bermuda zone at this time. Its been a very cheery conversation in this first long duration pass across the United States this morning. Chris Kraft passed up the word that we were real happy with the fuel cells and Pete Conrad, who is awake and talking, Gordo apparently asleep, concurred entirely. Among other events Chris Kraft read to Pete a morning news summary in which he advised that the headline in one of the local papers this morning said that the flight may splash down in the Pacific on the sixth orbit. This brought a big chuckle from Conrad - he said to tell them they were sorry to disappoint the paper. He said he felt that the flight only had about seven more days to go. In a more serious vein, he advised that he, Conrad, has drunk a total of about six pounds of water, Cooper about six and a half pounds. He also indicated the oxygen source pressure is now about 70 pounds, it would be up about 10 pounds over our long stable period of yesterday. We are reading about 80 on the ground - of course the difference between the ground gauge and the spacecraft is one of calibration. It will be a few minutes before the tape is racked up. When it is, we'll come back to play the conversation of this first stateside pass this morning. This is Gemini Control.

Gemini Control, Houston, here; 24 hours, ten minutes into the mission. We would like to up-date you on the perigee and apogee. Apogee, 212 statute miles. Perigee, 104.6. The revolution period, 94.5 minutes. We began the 16th revolution at 23 hours, 56 minutes, and 5 seconds into the mission. We have the tape from the State-side pass racked up, and we are prepared to play it for you at this time.

Conrad After this flight maybe they can save some weight and remove the heaters.

Cap Com Yeah, looks that way, doesn't it? I didn't realize that you were a heater test pilot.

Conrad I didn't either yesterday.

Cap Com We've sure got a lot of fuel cell experts here on the ground this morning, Pete.

Conrad I'll bet you do.

Cap Com They had to put bars on the windows to keep them out. Gemini 5, Houston flight.

Conrad Good morning.

Cap Com Good morning. The morning headline says your flight is, may splash down in the Pacific on the sixth orbit.

Conrad I'm sorry to disappoint them. I just told Gordo a few minutes ago we just passed a milestone--we only have seven more days to go.

Cap Com Roger. Pete they've got a clock down here that will give you the time to end the mission. It's not running right now, but yesterday it said 198 hours.

Your wives also made the front page this morning.

Very good pictures, and they look very pretty.

Conrad

Roger. You can tell them we are doing fine, and tell the doctors we are drinking lots of water, but neither one of us have been too hungry. We've had two meals, but we haven't eaten all of them.

Cap Com

How much water have you drunk, Pete? I've got notes here from Neal, or Elliot that say that your last drink was at 0105, 0104.

Conrad

I've almost had 6 pounds, and Gordo's had about $6\frac{1}{2}$ pounds, and we're being pretty generous with the gulps.

Cap Com

OK. You've had 6, and Gordo's had $6\frac{1}{2}$.

Conrad

That's a good number.

END OF TAPE

This is Gemini Control, Houston; 24 hours, 32 minutes into the mission, on the sixteenth revolution with the spacecraft just off the southeast coast of Africa. We have been out of touch with the spacecraft since the Canary-Kano pass. We expect to contact again at Canarvon. On the last revolution, excuse it, on the fourteenth revolution, over Canarvon--in the Canarvon area--a radar tracker, a person manning the radar tracking device in that area, reported sighting, visually sighting, the spacecraft. We are checking back with the Canarvon station to get additional information on him, his name and citizenship. We have had reports of visual sightings in the past, but this is the first I recall in this particular flight. Here in the Control Center serious consideration is being given to attempt a rendezvous with the pod. This would be, of course, with the passive object. The beacons are out, the lights are not flashing, the radar beacon on the pod is out, and at last reports it was some 75 miles from the spacecraft. We are tracking the pod; we hope to get a good fix on its position, and depending on those, the elements of that fix that will dictate the decision whether we will attempt to rendezvous or not. We certainly have the fuel to attempt it. This is Gemini Control.

END OF TAPE

This is Gemini Control in Houston, 25 hours, 2 minutes into the mission, the spacecraft on a swing up the Pacific. Over the Canarvon station only a few minutes ago, Pete Conrad performed a radiometer check on the star Vega. That is, he aligned the spacecraft so that one of his infrared sensing devices looked at the star Vega; he held it on the star for approximately 3 minutes while he read out the data on the spacecraft and it was, at the same time, telemetered to the ground station. The ground station reported that the telemetry was fairly noisy, but they got some data. Pete confirmed that he got some on-board. It was a relatively quiet pass, and we regret that our recording here in Mission Control in our new support area failed to pick up the conversation. However, we are working on it, and we will get it fixed up for the next pass. Going across the United States this time, it is likely that a decision will be made on whether to commit for a 33 orbit flight. That is, the retro times for the 33 - 1 may be passed up to the spacecraft during this next pass across the United States. This is Gemini Control in Houston.

END OF TAPE

This is Gemini Control Houston, 25 hours 28 minutes into the mission and within the last 2 minutes we have acquired the spacecraft via the Guaymas station. Gordon Cooper was on the loop. He had been napping for the last hour or so and in his familiar soft, slow Oklahoma drawl, he told the Guaymas station that the station was "looking mighty pretty down there." A very cheery Gordo, a doctor has just talked to him. He is a little concerned about their lack of sleep that the two pilots have had. They confirm that they have only had about 2 hour apiece, and they haven't eaten a great deal. And, as we have been talking, a new time to retrofire for the 33-1 has been passed up to the pilots. They -- we are now committed for at least a 33 orbit flight. Let's cut in now on that conversation live as the spacecraft moves across the southeast United States.

Cooper Hello down there. I can see all the towns and the highways.

Houston Flight Okay.

Cooper Roger. We are coming in over the Cape now. We can see the Cape very clearly.

Houston Flight Can you see the pads pretty easy.

Cooper Roger, we can see the pads, we can see the causeway.

Houston Flight Roger, they really stand out don't they, with that contrast.

Cooper They sure do.

Houston Flight Have you got the D-6 equipment all set up?

Cooper Ready to roll.

Houston Flight Okay. How's the weather over the Atlantic?

Cooper Very nice. There is light scattered clouds.

Houston Flight Okay.

Cooper Sun is shining.

Conrad I'll tell you one other thing we noticed. It looks
like our oxygen pressure may have gone back
up just a skosh.

Houston Flight Okay. We've had it holding for a long time. We have
a couple of extra PCM counts now, so we are all set.

This is Gemini Control Houston again. We are still in contact with the Bermuda station. During that pass, you heard Pete Conrad's report, a very hopeful item. He said that the oxygen pressure was up just a "skosh". That is Conradese for up just a little bit, a comforting factor. Earlier, the spacecraft was advised we have had some trouble reading out their TM data on their infrared measurements. They were advised to leave their infrared data transmitter on during this pass across the States so we could evaluate it. They are out over the island of Bermuda now and the flight plan calls for them to take some terrestrial photographs while in the area of Bermuda. We assume they are doing that now. Pete Conrad reported he had a tremendous vision from the use of the big lens, a 1270 mm lens mounted on his side in the spacecraft. We have had no additional communication since Bermuda acquired. We are standing by and we will play it for you as it happens. Just out on the edge of the Bermuda zone now. We will probably loose the signal within a minute from now.

We are also discussing now -- we have new elements on the pod. It was ejected earlier on the flight yesterday. I can pass those on to you. We have an apogee on the pod of 197.5 miles, a perigee of 102.6 miles. Those are both statute mile values. There was a period of very close to that of the spacecraft, about $95\frac{1}{2}$ minutes. The separation distance at last report is about 300 miles away and, as I indicated earlier, serious consideration is being given to effect some sort of a rendezvous maneuver with the pod. A quick indication is that it would take something on the order of 5 or 6 revolutions to actually catchup with the pod at this point. We have made no decision to undertake that maneuver but, as I say, serious consideration is being given to it. This is Gemini Control out at 37 minutes after the hour.

END OF TAPE

This is Gemini Control, Houston; 25 hours, 45 minutes into the mission with the spacecraft swinging down across Africa. We have the tape ready for you on the early portion of the state-side pass, which we think you will find of interest. In the course of the early discussion, as we indicated, they discussed the food situation. Dr. Berry is a little displeased. He doesn't think they have been eating as often or as much as they should have. They have indicated they've drunk a lot of water, about 6, slightly more than 6 pounds apiece. He's quite satisfied with that, but he's not completely satisfied with the amount of rest they've had, which totals out to something like about 2 hours, plus some napping during the first 24 hours of flight. In the course of the discussion with Jim McDivitt, he asked them if they noticed any LiOH effects.

This is the chemical formula for lithium hydroxide. It refers to the ingredient in the environmental control system in the spacecraft which removes carbon monoxide from the atmosphere. The reference, the question pertains to a suspicion we have that during the McDivitt-White flight, it might have been lithium hydroxide dust that caused some irritating effects on Jim McDivitt's eyes in the early portion of the flight, before it cleared up. We cannot confirm that that was the case in GT-4, but it is a suspicion. Whether founded or unfounded, apparently it's no cause for any irritation at this time, and they report no irritation to the eyes or to the nasal passages. We have the tape for you, and we will play it for you now.

Conrad

Bore site Kinley. I've got the big lamps in here,

and it's really fantastic.

Cap Com What did you say, Pete?

Conrad I said I've got the big lamps in here and I can see through it something fantastic if I could just find the point with it.

Cap Com Yeah. How are you doing with the tracking on that? Is it pretty easy? Or pretty difficult?

Conrad Just got it all put together.

Cap Com OK. We've got another person here who would like to talk to you for a couple of minutes.

Surgeon Gemini 5, this is Surgeon. Gordo, tell me about this sleep story here for a second. We're having trouble trying to get straight on the ground what both of you have done with sleep. As we figure it from your report so far, it appears you have had roughly two hours apiece. Is that affirmed, or have you had more than this?

Cooper That's about right. Maybe a little bit again that, in addition to that.

Surgeon Gordo, what seems to be bothering this sleep? Are you having trouble with the other guy's transmitting? Does this seem to be bothering the sleep?

Cooper The flight plans haven't been arranged where both guys, where one guy could sleep. It's where both of us have been having to do some of the easier tasks.

Cap Com OK. Well, let's check the food parts and other areas

that we seem to be having some trouble getting straight records here, and Pete said on the last pass that you had had at least parts of two meals, and I take it that that's meal A and meal B from the first day. Is that all you have eaten today?

Cooper That's about it.

Cap Com OK. Fine. One other question we ought to get some answers on--are you using the exciser for any other times and over the medical data passes? Are you using it just for general exercise?

Cooper Haven't had time yet.

Cap Com OK. Gee, I thought you were just loafing up there.--all this comfort and time to do nothing.

Cooper Been pumping the foot generator pretty hard, there.

Cap Com We should have one aboard. Gemini 5, this is Houston here.

Cooper Roger.

Cap Com Roger. You have a go now 33 - 1, and we've put the 33 - 1 TR time on your computer, so you are all set.

Cooper

Cap Com OK. Good luck on your D-6.

END OF TAPE

This is Gemini Control, Houston; 26 hours, 2 minutes into the mission. At this time the Tannarive station has gone into a local communicate condition. They should be establishing contact within a very few seconds. The flight is progressing very nicely here; our big clock's up above the, at the ceiling in the Mission Control Center now show a new time, ground elapsed time to retro-command, one for a 33 - 1 landing, should a landing become necessary. That time would be 24 hours and 38 minutes from now. We also had data from the Department of Defense that a fourth object is being tracked along with the spacecraft, the second stage, and the pod. It's identified as a piece of debris; we don't know whether it came from the second stage, or just where, very likely from the second stage in the act of separation. This is Gemini Control in Houston, 26 hours into the mission.

END OF TAPE

This is Gemini Control, Houston; 26 hours, 32 minutes into the mission on the seventeenth revolution, with the spacecraft just off the north-east coast of Australia. Since early this morning we have indicated that here in the Control Center, flight planners and engineers have been busy devising some sort of a rendezvous maneuver with the pod. The mechanics have been worked out whereby we might attempt such a catch-up maneuver with the pod over a six revolution period. They had actually gone so far as to brief the crew during the just-ended Canarvon pass on what type of burn to perform over the states. We had generally thought of bringing the apogee down to about 165 miles, waiting several revolutions, and then performing other maneuvers to make a close approach on the now-dead pod. However, in just the last few minutes the Flight Director has reconsidered the plan. He doesn't want to put the over-all lifetime of the mission in any jeopardy. We are still striving for our full 8-day mission, and plus the fact that he would like to see a little more power grow on the, in the spacecraft, a little more power available in the electrical system. He has decided not to attempt any rendezvous today. He's postponing any rendezvous attempts for at least several days, by which time hopefully we will be able to use the platform, the other guidance instrumentation available in the spacecraft for any maneuvers that might be attempted then. So, we'll say again, we'll not attempt any rendezvous maneuvers with the pod today, and at this time we are proceeding across the Pacific. This is Gemini Control signing off at 35 minutes after the hour.

END OF TAPE

This is Gemini Control Houston, 26 hours 49 minutes into the mission. At this time the Hawaii station is in contact with the spacecraft and making comparisons between ground readings and spacecraft readings on the various instruments and gauges. It was during the Canton pass just a few minutes ago that Jim McDivitt remoted through the Canton Island station, advised the crew that we will not attempt a rendezvous maneuver with the pod today. This has been the plan, that over the States we might put in motion a series of maneuvers that would bring us in close proximity with the pod, 5 or 6 revolutions later. However, it was decided not to attempt these maneuvers and put prime emphasis on the - attaining long duration time in orbit, something on the order of 8 days. For your information, the second stage booster for the -- of the Gemini Launch Vehicle has about 2 more days to go in orbit before it will decay and burn in. We do not have a predicted impact point for you at this time. The pod is trailing the booster by about 5 and one-half minutes. It, in turn, is some 375 nautical miles out in front of the spacecraft. Gordon Cooper has advised that he hasn't seen it for some time. We presume the lights, the blinking lights on the pod are now extinguished, the battery power out. In the parade of Gemini V and its entourage the third item in the parade is the spacecraft itself, trailing the pod by some 35 seconds, and the fourth item in the lineup is a piece of debris. The scrap is about 2 by 3 feet. We can't identify it precisely. It could be a piece of a skirt off the second stage, or just what we don't know, but it is trailing the spacecraft by about 8 minutes. We have no estimate on its lifetime. We have the Canton Island tape wrapped up and are prepared to play it for you now.

Houston Flight Gemini V, Gemini V, this is is Houston here. Over.

Conrad Roger, Houston. We hear you fine.

Houston Flight Roger, Gemini V. This is Houston here. Be advised that there will be no, I say again, there will be no OAMS burns over the States. We will not attempt to rendezvous with the REP.

Conrad Roger, understand. No rendezvous and there will be no burn.

Houston Flight That is affirmative. Later on in the mission we expect to do some burns and we can bring the platform up and we will run through some exercises using the fuel for that.

Conrad Okay.

Houston Flight Gemini V, this is Houston.

Conrad Go ahead, this is Gemini V.

Houston Flight Roger. For your information the REP is about 375 miles out in front of you at the present time.

Conrad Oh, is that right.

Houston Flight Roger. Can you still see the lights.

Conrad

Houston Flight Okay, you'd better take your vision test again.

Houston Flight Would you put your ECS O₂ heater to auto please.

Conrad You are fading out on your ... transmitter.

Houston Flight Roger, I state again. Would you put your ECS O₂ heater to auto. Your ECS O₂ heater to auto.

Conrad Roger. Going to auto ECS O₂.

Houston Flight Roger.

Houston Flight Be advised that the flight plan updates that you had for your pass across the States will remain the same.

Conrad Roger, understand.

Houston Flight Okay.

END OF TAPE

This is Gemini Control Houston, 27 hours 2 minutes into the flight. The spacecraft is directly overhead us here at Houston and Jim McDivitt just ask Pete Conrad if he saw him wave, a joking reference of course, and Pete said no, it was a little cloudy. He also said he couldn't quite see the Domed Stadium, although he was looking. West Texas must be clear because they had a, they gave us a beautiful description of the El Paso area, and they -- in the course of this pass they have turned their radar on, they have powered up their computer, and they have also turned on what is identified as the MDIU. That is the manual data insertion unit, which is a piece of associated electronics that goes with the computer and into which data can be inserted annually. We are still on an open line to the spacecraft and, which is right now over the state of Alabama. Let's tune in live to see if there is any further discussion.

Gemini Control again. Apparently they have nothing to report right now. We will stand by. In the course of the pass, our environmental systems man, who watches the fuel cell area, says it is looking good on the fuel cell situation. Here we are again.

Conrad .66 miles

Houston Flight Very good.

Conrad 222.48, as we go by the Cape.

Houston Flight Roger.

Houston Flight You think you can make a REP out on that?

Conrad You bet. Not only that, but I wish we hadn't had those little problems because I think we would have caught the REP.

Houston Flight Yep.

Conrad We just went by the Cape, 166.92.

Houston Flight Roger.

Conrad Closest approach is 164 miles.

Houston Flight Gemini V, you have completed your radar pass. Gemini V, you have completed your radar pass. We would like to have you turn off your radar again, turn your computer off, and bring your horizon scanners back up.

Conrad Roger.

Conrad We're still getting readouts. 248 miles.

Houston Flight Roger.

Conrad ... (broken)

This is Gemini Control again. In the course of that pass you heard Pete Conrad talking about the radar. Here we go again, stand by.

Conrad This is Gemini V. We are powered back down now, Jim.

Houston Flight Okay, fine. Listen, for your information, we would like to have you complete that Lored pass on that next pass, and then it's time to get some sleep, don't you think.

Conrad We highly concur.

Houston Flight Oh, yawn.

Conrad I got pretty sleepy on that last light side.

Houston Flight Roger, listen. If your getting sleepy, go ahead and cat nap around there.

Conrad Say again.

Houston Flight Don't forget the good old cat naps now when you are floating around.

Conrad S.

Gemini Control Houston here again. Jim McDivitt passing on some advise about catching cat naps, advise which he didn't follow to closely during his 4-day flight, but he is certainly an expert in that department now. The reference to the sighting over the Cape is this. There is a spare pod, or REP as it is referred to in the flight, on a tower at the Cape, which is still live. It was powered up at this time, the boys turned their radar on, and they caught some measurements with it, so their radar is effective, and it apparently is quite accurate. The pod is broadcasting in L-band signal and now we are getting more transmission. We'll go back to the crew.

Conrad ...

Houston Flight Oh, it makes a lot of noise, huh?

Conrad Everytime it cycles, the valves really bump.

Houston Flight Gemini V, the Flight Director suggests that if you start liking the M-1 maybe it will put you to sleep.

Conrad I like it! I like it!

Houston Flight Not that much.

Gemini Control Houston here. The spacecraft down on the lower edge of the Bermuda area and the upper right edge of the Antigua acquisition area and we probably reached the end of our communication.ability for this pass. The most informative pass, I think, and we will wrap up this tape and play it in its entirety for you as soon as it is available. This is Gemini Control out at 12 minutes after the hour.

END OF TAPE

all the gear down now. We got 4 pictures of the moon
each magazine.....

Guaymas Cap Com You say you got 4 pictures of the moon and what else?

Conrad Got 4 pictures of the moon with each magazine, 12 pictures
total.

Guaymas Cap Com Okay, I got that.

Conrad We continually have had these RCS heater lights come, so
we have just turned the RCS heaters on and left them on.

Guaymas Cap Com Ah, roger.

Houston Flight Gemini V, Houston here.

Conrad Hello Houston. Gemini V coming up on El Paso.

Houston Flight Roger. Say, when you make this pass across the Cape,
that radar test, we would like to have you power
down your horizon scanners and bring your computer up
in the Catch-up Mode.

Conrad Okay. Put the radar to on and turn the scanners off,
and we'll bring the computer up in the Catch-up Mode.

Houston Flight Roger. And if you have any problem with delta P lights
or anything, we want you to turn the computer back off
again, of course.

Conrad Roger. Computer is on. I'd like to bring the MDIU on.

Houston Flight Well, we are trying to keep the power down here Pete, and
the only reason we are bringing the computer up is we
can't get the data out of the radar unless we've got the
computer on.

Conrad Okay, we just passed El Paso, International and Biggs.

Houston Flight Very good.

Conrad Boy, it's a pretty day out there. You can really see well.

Houston Flight Gemini V. This is Houston.

Conrad Go ahead Houston.

Houston Flight Why don't you go ahead and power up the MDIU then?

 It's only a quarter of an amp and maybe you can read something out on the range or range rate.

Conrad Roger. We got a computer light on in the Catch-up Mode.

Houston Flight Okay.

Conrad We just passed Houston a couple of seconds ago.

Houston Flight Could you see me wave?

Conrad

Houston Flight Okay.

Houston Flight Gemini V. This is Houston. Could you see the Domed Stadium when you went over?

Conrad You could just see Galveston Bay, there's some clouds between us and we are north of it.

Houston Flight Okay.

Conrad tracking right down there, 222.48, as we go by the Cape.

Houston Flight Roger.

Houston Flight Do you think you can make a REP out on that?

Conrad You bet. Not only that, but I wish we hadn't had our little problem because I think we would have caught the REP.

Houston Flight Yep.

Conrad We just went by the Cape, 166.92.

Houston Flight Roger.

Conrad Closest approach is 164 miles.

Houston Flight Gemini V. When you have completed your radar pass,
we'd like to have you turn off your radar again, turn
your computer off, and bring your horizon scanners back
up.

Conrad Roger. We are still getting readouts, 248 miles.

Houston Flight Roger.

Conrad That is it, yeah, lost the pod.

Houston Flight Gemini V, Houston. Give us a call when you get powered
back down again.

Conrad Roger, Gemini V. We're powered back down now, Jim.

Houston Flight Okay. Fine. Listen, for your information, we'd like
to have you complete that Lorado pass on the next
pass and then it's time to get some sleep, don't you
think.

Conrad We heartly concur.

Houston Flight Oh, yawn.

Conrad I got pretty sleepy on that last night side pass.

Houston Flight Roger, and listen, if you are getting sleepy, go ahead
and cat nap around there.

Conrad Say again.

Houston Flight Don't forget the good old cat naps now when you are floating around.

Conrad

Houston Flight Gemini V, Houston here. Have the thrusters been making enough noise to keep you awake?

Conrad The thing that really makes the most noise, and I was wrong and Gordo was right, is the M-1 experiment. It keeps clicking away merrily.

Houston Flight Oh, it makes a lot of noise, huh?

Conrad Everytime it cycles, the valves really thump.

Houston Flight Gemini V, the Flight Director suggests that if you start liking the M-1, maybe it will put you to sleep.

Conrad I like it! I like it!

END OF TAPE

This is Gemini Control, Houston; 28 hours into the mission on the eighteenth orbit, with the spacecraft on the northern coast of Australia. During the last State-side pass, 40 to 50 minutes ago now, we brought equipment up, which created a total power drain of 28 amps. This is by far the highest power load we've put on the spacecraft since very early in the flight, in fact, since the second revolution; no difficulty with that power drain at all, and the oxygen reactant supply to the fuel cell continues to build in pressure. We presently estimate that pressure within the tank at about 80 pounds. This has been a steady climb from a low value yesterday, or some 12 to 15 hours ago, of down the order of 65 pounds. Among the visitors here in the Control Center this morning is Mr. J. S. McDonnell, Chairman of the Board of the McDonnell Aircraft Company in St. Louis, prime contractor for the Gemini spacecraft, watching with interest. We have ready for you at this time a taped conversation of the, between the crew and the Canarvon Station which conversation just ended a minute or two ago. Could we have the tape now please.

Canarvon Cap Com Gemini V, Canarvon Cap Com.

Conrad Canarvon, Gemini V.

Canarvon Cap Com Roger, I have some PLA and CIA updates. Are you prepared to copy?

Conrad

Houston Flight Update only to PLA's.

Conrad

Canarvon Cap Com Roger, Flight. Area 20-4, 01 day, 21 hours, 14 minutes, 40 seconds, 8 + 38, 15 + 09, roll left 51, roll right 69. The bank angles of all these are roll left 51 roll right 69. Area 21-4, one day, 48 28 8+19, 15+39. Area 22-3, second day 00 hours, 09 minutes, 13 seconds, 09 + 29, 15 + 28. Area 23-3, second day, 01 hours, 43 minutes, 32 seconds, 8 + 33, 14 + 58. Area 24-3, second day, 03 hours, 17 minutes, 20 seconds, 8 + 17, 15 + 41. Do you copy?

Conrad 02, 03, 17?

Canarvon Cap Com That last one was 03 hours, 17 minutes, 20 seconds.

Conrad Roger, I'm copying them. Our status is green?

Canarvon Cap Com Roger, you look good on the ground.

Houston Flight Canarvon, Houston flight.

Canarvon Cap Com Flight, Canarvon.

Houston Flight The 22 and 23 -3 recovery areas have marginal weather just to pass the time of day.

Canarvon Cap Com Roger. Gemini V, Canarvon. The area 22-3 and 23-3 have marginal weather conditions. All the other weather conditions are good.

Conrad Did I understand area 22-3 and 23-3 have marginal weather?

Canarvon Cap Com Roger.

END OF TAPE

Gemini Control, Houston here; 28 hours, 28 minutes into the flight with the spacecraft rapidly approaching the coast of California. In the Hawaii pass, just a very few minutes ago, the Pilot Pete Conrad received up-dating on his star charts aboard, advice as to where and when to look for certain stars, and fixing the charts that are already on there. Gordon Cooper we suspect is sleeping this time. The Surgeon isn't sure whether the lowered rates are an indication of sleep. He says sometimes Gordo just gives us these low heart rates down in the 50's just when he is relaxing, but the suspicion is that he may be sleeping. Earlier this morning the crew breakfasted on a meal which included a grapefruit drink, six bites of chicken, in the bite-size form, that is about $\frac{1}{2}$ inch square; they also had corn chowder, peaches, and some small brownies. The total calories in such a meal is 932. As we swing across the United States, the pilots will be looking down at that big eye chart over, just north of Laredo, and as we have been talking, the TM contact has been established with Guaymas. Let's cut in now live on the Guaymas-Gemini 5 conversation.

Guaymas Cap Com OK. We're looking pretty good here. We'll be standing by for you.

Conrad OK. Thank you.

Guaymas Cap Com Flight Guaymas.

Houston Flight Go ahead.

Guaymas Cap Com OK. Wheneverdrop out, the telemetry was on acquisition. Did Hawaii send the TX?

Houston Flight Negative.

Guaymas Cap Com OK.

Houston Flight Guaymas, we would like to know the summary when you got solid TM.

Guaymas Cap Com Roger. We're getting good solid TM at this time.....

Gemini Control Gemini Control here. For some reason he had some bad TM at the start of the Guaymas pass; perhaps they were out of range. However, the TM is solid now. Flight controllers didn't like the looks of the early summary. They had asked for another one, and they are getting it now. It's cleaner data. Let's stand by and listen again.

Guaymas Cap Com Texas go remote.

Texas Cap Com We did it, Jim.

Guaymas Cap Com Texas is remote.

Gemini Control In just a second or two we should hear Cap Com Jim McDivitt calling the spacecraft as the Texas site has been remotod. Our Corpus Christi station now has TM solid.

Guaymas Cap Com Houston, Texas let me know. We need a station for our air to ground remoting.

Gemini Control Still standing by. A rather untypical pass--untypical in the sense of lack of conversation. We do expect Jim McDivitt to come up momentarily. Our Surgeon reports he is very satisfied with the medical telemetry he is receiving here. Within a very few seconds the spacecraft should be directly over Laredo and ready to start that eye test.

Conrad To Houston, Gemini 5.

Houston Cap Com Go ahead.

Conrad Now we came to awe could see Corpus alright, and our yaw angles weren't too good that you gave us for that air shield air passed under our nose, but we had already gotten by it by the time we had picked up the air shield.

Houston Cap Com OK. You were supposed to be quite a ways up, north of the thing there, Pete; and wasn't the best pass, but it was the best pass we've had today.

Conrad OK.

Houston Cap Com Say, I would like some information from your vision tester.. Can you tell me what your scores were? You know inside the spacecraft vision test?

Conrad Well, they are stored in the vision tester. We took them yesterday, and I would have to get them out for you. Do you want me to get them out?

Houston Cap Com Oh, no. It's not necessary right now. I'll tell you what--from now we would like to get back on the sleep cycle that we've got on our flight plan, and we really want you to get to sleep now.

Conrad We both got some the last night time.

Houston Cap Com Say again.

Conrad We both got some the last night time.

Houston Cap Com OK. Very good. Let me ask you a question-- did you pick up any good acquisition aids for that Lando

thing?

Conrad

We had Houston in sight very clear like.

Houston Cap Com

Roger. Gemini 5, Houston here again. We'd like a summary of your experiments you've accomplished and where you think we stand. We'd like to have you prepare this and give it to us at some later time.

Conrad

I'll give it to you right now.

Houston Cap Com

OK, if you want to do that.

Conrad

I'll read them down in the order that you sent them up-- on the first D-4's we deleted; both of them in Hawaii.

Houston Cap Com

Just a second, say that again.

Conrad

2 half sixes at 010748, 010922.

Houston Cap Com

Pete, stand by. Let me get ^{that} thing we read up to you.
OK. Go ahead now.

Conrad

Then we missed the first Apollo land mark at the UHF test, got the second Apollo land mark.

Houston Cap Com

OK.

Conrad

I believe, yeah, we missed the D-4 at 011210.

Houston Cap Com

OK. What was the time on it again?

Conrad

01121000

Houston Cap Com

OK.

Conrad

Then we got the D-4 at sequence 4-11 and 4-12.

Houston Cap Com

OK.

Conrad

We deleted the D-6 sequence 134.

Houston Cap Com

Roger.

Conrad We did not do the D-4, D-7 at 420, but we did get the 4-10A, and the 405. We got the D-1, sequence 01, and the D-4, sequence 422.

Houston Cap Com OK.

Conrad We got the radar sequence test 8.

Houston Cap Com OK.

Conrad We got the S-6, sequence 8. We're standing by for the S-7. Copy?

Houston Cap Com Roger. You got the S-6, sequence 8. I missed the (interrupted)

Conrad We had a view of a large storm at 01171200 to photograph, and we got it.

Houston Cap Com OK. That was a S-7 there. Right.

Conrad I'm sorry---S-7.

Houston Cap Com 9-1 telemetry,, at AON.

Houston Cap Com Another thing here, Gemini 5 (interrupted)

Conrad garbled

Houston Cap Com Yes, I mislooked myself. We had it listed as D-6, and I meant to say D-6. Can you go through the first part of yourtthing again? the S-8?

Conrad Yeah, we deleted the first D-4,D-7, at Hawaii.

Houston Cap Com OK.

Conrad We got the 2 S-6 sequence 8's at 01074826 and 01092249.

Houston Cap Com OK.

Conrad We did not get the Apollo 208 the first time.

Houston Cap Com OK. I got that part of it, Pete. How about the

SAD 13 at 10620?

Conrad

Say again, Houston.

Houston Cap Com

Roger. How about the SAD 13 at 10620?

Conrad

The vision test?

Houston Cap Com

Yes.

Conrad

It was in the flight plan?

Houston Cap Com

Yes. Actually we added it to the flight plan right there, Pete. It wasn't in the printed flight plan. I guess though they are part of the vision test that you did on board, aren't they?

Conrad

That's affirmative.. We've just done one of those, and I also did the flotometer window scan for the first day. I just did that before the Laredo pass just now.

Houston Cap Com

OK. You did the flotometer window scan. Roger.

Conrad

Yeah, first day window scan.

Houston Cap Com

OK.

Conrad

Now for photography, we've taken about 85 S-5 and S-6 pictures.

Houston Cap Com

You say you have taken about 85 S-5 and S-6. Is that right?

Gemini Control

Gemini Control here. That apparently wraps up the conversation between the spacecraft and Jim McDivitt. You heard Pete Conrad read off all the experiments that they had completed to date, and earlier I believe we

heard references perhaps over Hawaii tape that you may not have heard as yet, which we will play for you at the conclusion of this pass--just some of the planned-landing areas in the early 20 revolution series, caution that that is just a standard up-dating. We have no plans to come in on orbits 20 or 24 although the numbers for those orbits were passed along as a matter of flight planning routine. This is Gemini Control, out at 46 minutes pass the hour.

END OF TAPE

This is Gemini Control Houston. We now are 29 hours 2 minutes into the mission. We are on the 19th revolution down over the South Atlantic. We have ready for you at this time some tape that proceeded the live portion on the last State side pass, and we will break that and come back with about two minutes of additional conservation that followed a long drop in the live portion, at which point we broke over the States. So, with the tape backed up on Hawaii, we will play that for you now.

Hawaii Cap Com Gemini V, Hawaii Cap Com.

Conrad Go ahead Hawaii, Gemini V.

Hawaii Cap Com Roger, I've got a flight plan update for you when you are ready to copy.

Conrad Roger, wait one. Roger, go ahead.

Hawaii Cap Com Roger, Sarah 7, first day, 20 04 43. Sequence 03. Command Pilot only, followed immediately with a 04, that is a sequence 04.

Conrad Roger, understand. S-7 - 01 20 43, Command Pilot only, sequence 03, immediately followed by 04.

Hawaii Cap Com Roger. Also a Sarah 8/delta 13. First day, 18 34 38. Sequence 03, pitch down 30 degrees, yaw right, 37 degrees.

Conrad Okay, 01 18 34 38, sequence 03, for a S 18 13. Pitch down 30, yaw right 37.

Hawaii Cap Com Roger, we have a map update, at - on the first day at 19 36 48, under remarks it's 128.1 degrees east, on rev 19.

Conrad 01 36 49, 128.1 east, rev 19.

Hawaii Cap Com Roger. You start your start at the same time. It's right Ascension 2 hours plus 12 minutes.

Conrad Roger. Right at Ascension, 2 hours plus 12 minutes.

Hawaii Cap Com Roger. Be advised you have a UHF 6 over the States.

Hawaii Cap Com All systems look good Flight.

Houston Flight Rog.

Gemini Control here. The updates that Pete Conrad was receiving there from the Hawaii Cap Com were for the star charts look angles and the like that are onboard. As this 19th revolution progresses, the flight plan calls for Pete Conrad to start a nap right now with the spacecraft down on the Southern tip of Africa. This nap to go on for several hours, and during the Carnarvon side, slightly before the Carnarvon acquisition, Gordon Cooper is to purge both the hydrogen side and the oxygen side of the fuel cell. The operation of which has shown steady improvement throughout the day. He will purge it by flushing extra amounts of hydrogen and oxygen through the cell. A little later, there will be a medical data pass over Hawaii, and as the spacecraft swings down off the western coast of Mexico, Cooper will attempt to get some photographs of the tropical storm Doreen which is now located somewhere south of San Diego. We have the tape now on the last 2 minutes of conservation from the State side pass and we are prepared to play it for you now.

Cooper We are sliding right down the coast of South America and it looks pretty nice down there.

Houston Flight Many clouds down there?

Cooper Quite a few big thunderstorms.

Houston Flight] I understand we got a great big thunderstorm on Antigua right now.

Cooper I believe we are already by that.

Houston Flight Yep.

Cooper I didn't take a picture of that big thunderstorm over Antigua.

Houston Flight Okay. Say, did you pick up any good land marks over Laredo that might help you acquire it on the -- in the next couple of days.

Cooper Yeah, there is a big lake out there. We've got to get the lake boresighted with the Laredo airfield.

Houston Flight Okay. One thing that you might keep in mind, the next time you go by there and look at it, there are some roads leading out to the -- those things that you are supposed to look at there, and they are, there is some concern that you might mistake the roads for channels, so if you see that the road is misleading you, give us a call and we'll see if we can get the thing fixed up so it doesn't look like canals.

Cooper Okay. It looks like they had about as good weather as we could expect there.

Houston Flight Okay.

Houston Flight Gemini V, we'd like to have you delete the aeromed pass over Carnarvon. We'll pick it up over Hawaii.

Cooper Okay, I understand. Skip the aeromed pass over Carnarvon, pick it up at Hawaii.

Houston Flight Roger. Your primary O₂ pressure looks very good. We'll just leave it right in auto heater.

Cooper Okay.

Gemini Control here, 29 hours 32 minutes into the mission on the 19th revolution, With the spacecraft in touch with the Carnarvon station. Gordon Cooper has been talking to the ground there. He has just completed a purge of the hydrogen side of the fuel cell followed by a purge of the oxygen side of the fuel cell. And, it should be a relative brief pass because we are on the high side of Carnarvon. We have been furnished some additional numbers on the REP from the NORAD people at Colorado Springs. They now estimate the REP is ahead of the spacecraft by a little more than 200 nautical miles, or 230 statute miles. The REP precedes the spacecraft. All quite here, going very routinely. This is Gemini Control.

END OF TAPE

Gemini Control here. Twenty-nine hours, 32 minutes into the mission on the 19th revolution. The spacecraft in touch with the Canarvon Station. Gordon Cooper's been talking to the ground and has just completed a purge of the hydrogen side of the fuel cell followed by the oxygen side of the fuel cell and it should be a relatively brief pass because they the high side of Canarvon. We've been firming some additional numbers on the REP from the Norad people at Colorado Springs, they now estimate the REP is ahead of the spacecraft by a little more than 200 nautical miles or 230 statute miles. The REP preceeds the spacecraft. All quiet here, going very routinely, this is Gemini Control.

END OF TAPE

Gemini Control here, 29 hours 46 minutes into the mission on the 19th revolution. We have the brief Carnarvon discussion racked up for you and ready to play. In this discussion you will note that half way through the purge, on the first purge on the oxygen side, Pete Conrad wakes up, he had been sleeping for about 1 hour, and he noted that the crossover switch as he referred to it, as the crossover valve, was not in the proper place for the purge. This needs a little bit of explanation. This switch has to be in an on position so that the oxygen from both tanks can flow through the oxygen side of the fuel cell and this is what increases the flow which provides the purging action. It was not in the proper position on the first one so it was an invalid purge, however, it was repeated and everything is moving along smoothly. Now, Pete presumably has gone back to sleep. As we said, we have the tape and are prepared to play it for you now.

Carnarvon Cap Com Gemini V, Carnarvon Cap Com.

Cooper Go ahead Carnarvon, Gemini V.

Carnarvon Cap Com Roger, we'd like a purge on fuel cell section 1, the
 O₂ and the H₂, exercising the same precautions on the
 O₂.

Cooper Roger, you want a purge on section 1, O₂ and H₂, right.

Carnarvon Roger, would you give us a mark on the start and stop
 times.

Cooper Roger, stand by one.

Carnarvon Cap Com Roger.

Cooper Crossover is on.

Carnarvon Cap Com Roger.

Cooper Purging H₂ starting.

Carnarvon Cap Com Roger.

Cooper Roger, we had a fuel cell delta V light, section 1.

Carnarvon Cap Com Roger, we copied.

Houston Flight Was that hydrogen or oxygen.

Carnarvon Cap Com That was hydrogen.

Cooper Are you ready for the oxygen purge?

Carnarvon Cap Com Roger, go ahead.

Cooper Roger, oxygen purge starting now. Conrad's still asleep. We got a delta V light.

Carnarvon Cap Com Stop the purge.

Cooper Roger, we've stopped.

Carnarvon Cap Com Flight, we've got a delta V light on the O₂.

Houston Flight Roger.

~~Carnarvon Cap Com Purge has stopped.~~

Houston Flight Roger. What is your pressure readout on the ground.

Carnarvon Cap Com Stand by, we are getting it now. That binary count is 19.00.

Conrad Carnarvon, this is Gemini V.

Carnarvon Cap Com Go ahead.

Conrad I didn't have the crossover on. I woke up out of a sound sleep to ... so, let's try it again. I didn't have the crossover open.

MISSION COMMENTARY TRANSCRIPT

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Carnarvon Cap Com That explains it.

Conrad Stand by. MARK. Starting off the purge.

Carnarvon Cap Com Roger.

Conrad Pressure is holding good and no delta V light.

Carnarvon Cap Com Roger, we concur.

END OF TAPE

This is Gemini Control, 30 hours 2 minutes into the mission, on the 19th revolution. We have just completed a medical data pass over Hawaii in which the Command Pilot, Gordon Cooper, filled in the surgeon on the ground with all of the medical quantities, took the blood pressures and associate readings. Among other items that he reported, apparently the cuffs, the cuffs on Pete Conrad's legs, are not working just as they should. Cooper reports that the little drive mechanism is actuating but the cuffs are not inflating. The system is so designed that the cuff inflates just like a blood pressure cuff on your arm and then it deflates and stays down for 4 minutes and then it inflates for a period of 2 minutes. The cycle continues, but apparently the inflation process is not going on. Apparent malfunction in the cuff. Cooper is leaving the cuffs on his legs* and we will see what develops there. We have the tape of the Hawaii conversation ready to play for you at this time.

Houston Flight	Gemini V, Gemini V, this is Houston here.
Hawaii control	Hawaii has telemetry solid.
Cooper	Go ahead Houston, Gemini V.
Houston Flight	Roger, Gemini V, Houston here. We were trying to get you earlier. I just wanted to check out the wheeling voice loop now. We have taken care of the situation.
Cooper	Roger.
Houston Flight	Roger, how do you read us through the wheeling.

*Cuffs were on Conrad's legs.

Hawaii Cap Com Gemini V, this is Hawaii.

Cooper Roger Hawaii, Gemini V.

Hawaii Cap Com Roger, we have your temperature. Standing by for your blood pressure.

Cooper Roger, sending blood pressure now.

Hawaii Cap Com Did you copy, Flight.

Hawaii Cap Com Gemini V, this is Hawaii Surgeon. Your cuff is full scale.

Hawaii Cap Com We have a good blood pressure, give me a mark when you begin your exercise.

Cooper Roger, starting exercise now.

Cooper Ending exercise now. Sending blood pressure now.

Hawaii Cap Com Roger. Cuff is full scale.

Hawaii Cap Com We have a real fine blood pressure that time. Standing by for your water and sleep report.

Cooper Okay, one moment.

Cooper Roger, on water, the Command Pilot has had 1 ounce over 7 pounds, and the Pilot has drunk not quite 1 ounce over 6 pounds.

Hawaii Cap Com Understand. 1 ounce plus 7 for the Command Pilot, 1 ounce plus 6 pounds for Pilot. How about sleep report.

Cooper Roger, the Pilot has been asleep here on and off. He has gotten a couple of real good naps here and there. I've had about 45 minutes of sleep on the previous night side. The Pilot's M-1 cuffs appear to have quit working. We

can hear the little bottle still actuating, but apparently the cuffs are no longer actuating.

Hawaii Cap Com Roger, understand. Pilot's M-1 cuffs are actuating but not inflating.

Cooper That's affirmative.

Hawaii Cap Com Thank you Gemini V. Hawaii Surgeon out.

END OF TAPE

This is Gemini Control at 30 hours and 32 minutes. Spacecraft Gemini V is now passing off the west coast of South America and at this time in the Control Center the second shift controllers White team has taken over. Flight Director Chris Kraft and several of his controllers on the Red team have left the building and are on their way to NASA Building No. 6, the Press Center, for an interview with the newspaper and news media representatives. At this time in the Control Center our new Flight Director Gene Kranz is making a status check and we expect to have an up-to-date summary of the flight as it is right now during our next transmission.

This is Gemini Control.

END OF TAPE

This is Gemini Control at 31 hours and 41 minutes into the mission. The spacecraft is now passing over Guaymas, Mexico on its twentieth revolution around the earth. We have had a status check here in the Mission Control Center connected by our Flight Director Gene Kranz, as follows: aboard the spacecraft the power situation continues to improve, the crew is able to consume more power, drawing something like 20 to 25 amperes while the fuel cell pressure holds steady above 80 pounds per square inch. From a medical stand point, the crew is in excellent shape after 31 hours of flight. There are no physical problems evident. Dr. Dwayne Catterson, our flight surgeon, thinks the crew should have a little more sleep. He feels this will be taken care of naturally. At this time in the spacecraft, Pilot Pete Conrad is in a sleep period. He is due to awaken shortly, and Command Pilot Gordon Cooper will begin a sleep period. Cooper has also finished his second meal, meal B for the second day. There is very little programmed activity slated for the crew for the next couple of hours. The flight crew has been performing some of the experiments that were programmed, both photographic experiments and visual experiments. They have been doing this activity, except when cloud cover and fuel cell checks interfered with this activity. The Mission Controllers here in the Control Center appear to be settling down for a routine, long-haul operation. Our last voice communication with the spacecraft, we had two, one at 31 hours and 31 minutes over Hawaii, At that time Hawaii advised the spacecraft crew that they were green from

the ground, and Cooper replied, "Everything is
go up here." Essentially, the same thing happened
as the spacecraft passed over the Guaymas tracking
station. This is Gemini Control

END OF TAPE

This is Gemini Control at 32 hours, 20 minutes into the flight mission. Spacecraft Gemini 5 is now passing over South America, and has started the twenty-first revolution over the earth. The power situation aboard the spacecraft continues to improve. The pressure reading, the last one we had, showed 86.2 pounds per square inch, 86.2 psi. Chris Kraft, the number one flight director, has returned to the Control Center and with him, Jim McDivitt. At this time we have a cluster of three astronauts around the spacecraft communications council, Jim McDivitt, "Buz" Aldrin, who is on duty, and Neil Armstrong. Our last voice communication with the spacecraft was over the Guaymas tracking station. The conversation was very brief, and we will now play be that tape to communication.

Conrad Hi, Guaymas. This is Gemini 5.

Guaymas Cap Com OK. How are you doing up there?

Conrad Roger. Doing fine.

Guaymas Cap Com OK, you are looking real good here on the ground.
We would like you to turn the ECS O₂ heater switch to the off position.

Conrad Roger. ECS O₂ heater to off.

Guaymas Cap Com Roger.

Conrad It's off.

Guaymas Cap Com Roger. Are you all squared away? Do you need anything at all?

Conrad Not at all, don't believe so. Believe we're in pretty good shape.

Guaymas Cap Com OK.

Conrad Thank you.

This is Gemini Control, 32 hours and 32 minutes into the mission. Our spacecraft, Gemini 5, is on its twenty-first revolution of the earth, and is approaching the continent of Asia. At the present time in the Control Center, everything is quiet. We have had no voice transmission or conversation with the flight crew for approximately 30 minutes. According to our flight plan, the Command Pilot Gordon Cooper is asleep, and the Pilot Pete Conrad will shortly be performing some checks aboard his spacecraft, one of which will be a thruster illumination check; but that is sometime off. Our next voice transmission with the spacecraft is expected to take place over the Guaymas, over the Coastal Sentry Quebec tracking station south of Japan in the Pacific Ocean. This is Gemini Control at 32 hours and 33 minutes into the mission,

END OF TAPE

This is Gemini Control at 33 hours and 2 minutes into our mission. The spacecraft is now approaching the Hawaiian tracking station on its twenty-first revolution over the earth. Our last voice communication with the flight crew came just a few minutes ago as the Spacecraft Gemini 5 passed over the Coastal Sentry Quebec tracking station, located in the Pacific, south of Japan. At that time Pilot Pete Conrad reported that Gordon Cooper is in a sleep period. He also reported that the blood pressure cuffs built into his flight suit are working again. Conrad said a kink had worked out at the suit attachment, and that he had been able to fix it. The Coastal Sentry Quebec advised Conrad to do a cabin lighting survey experiment. This is a measurement with a potometer to determine the amount of light at various points within the spacecraft. The voice conversation was somewhat garbled between the Coastal Sentry Quebec and the spacecraft. This is Gemini Control.

END OF TAPE

This is Gemini Control at 33 hours and 32 minutes into the mission. Our spacecraft is now passing over South America and has just begun its twenty-second revolution over the earth. Our last voice transmission, or communication, with the spacecraft was over Hawaii. At that time Pilot Pete Conrad was advised to make a thruster illumination experiment over the Rose Knot Victor tracking station ship located on the west coast of Peru. This particular experiment consists of pulse firing the yaw thrusters and measuring the amount of light with a photometer. Conrad will also make pictures of the thruster firing. Hawaii Cap Com (Capsule Communicator) during the pass over Hawaii observed that Conrad's voice sounded a little hoarse. Doctor Dwayne Catterson, here in Mission Control Center, expressed no concern over this, as his medical data indicates both members of the flight crew are in excellent physical condition. We will now play back the taped voice communication between the spacecraft and the Hawaiian tracking station.

Hawaii Cap Com Gemini 5, this is Hawaii.

Conrad Hello, Hawaii. Gemini 5 flight.

Hawaii Cap Com Roger. I have a tracking test up-date when you are ready to copy.

Conrad Garbled

Houston flight Hawaii, that's a map up-date.

Hawaii Cap Com Roger. Go ahead, flight.

Houston flight That's a map up-date, Hawaii.

Hawaii Cap Com Roger. Gemini 5, this is Hawaii; a map up-date, 2000559 degrees east. Copy?

Conrad Roger, I understand map up-date 02000559 degrees
 east.

Hawaii Cap Com Roger. Star up-date, 20005, 2 hours, 4 minutes, 40
 seconds. Got it?

Cooper Star, 020005, 2 hours, 4 minutes, 40 seconds.

Hawaii Cap Com Roger. . . . flight

Cooper Did you get the tape dump okay?

Hawaii Cap Com That's affirmative. Gemini 5, this is Hawaii; we're
 standing by.

Cooper Gemini 5's green up here.

Hawaii Cap Com Roger.

Cooper One thing Hawaii, looks like our hydrogen pressure
 is building up - the point if any, you're
 getting close to it. Can you check on that?

Hawaii Cap Com Roger, Gemini 5. Gemini 5, could you give me a
 readout. We hold 275 pounds.

Conrad Okay, I read up here that my quantity is 95 percent
 and pressure is six thirty.

Hawaii Cap Com Roger.

END OF TAPE

This is Gemini Control at 34 hours and 2 minutes into our mission. Our spacecraft, Gemini 5, is passing over the Tannarive tracking station off the southeast coast of Africa. Command Pilot Gordon Cooper is still in his sleep period, and in approximately 17 minutes Gordon Cooper will have exceeded his own record of traveling in space. As you may recall, on May 15, 1963, in spacecraft Faith 7 Gordon Cooper went 22 revolutions, for a total time in space of 34 hours and 20 minutes. Although he is asleep at this time and is scheduled to be asleep for another hour, we think he will be awake approximately 60 minutes from now and we'll attempt to advise him as the spacecraft approaches the Rose Knot Victor, the tracking ship located off the east coast of South America. The west coast of South America. And we hope at that time he will be awake and we can get some comment from him. However, if he is still asleep we will advise Pilot Pete Conrad and I'm sure we'll get some comment from Pete. At this time the spacecraft is in drifting flight, all systems appear to be in very good condition and there are no immediate experiments coming up. This is Gemini Control.

END OF TAPE

This is Gemini Control at 34 hours, 20 minutes and 4 seconds into our mission. Spacecraft Gemini 5 is now passing just south of Okinawa and it is on its 22 revolution over the earth. Command Pilot Gordon Cooper is still in his sleep period as he surpasses his own previous record for space flight. It was just a little over two years ago that Cooper in his Faith 7 spacecraft closed out the Mercury program with a 22 revolution flight that lasted 34 hours and 20 minutes. Here are some additional figures on our spaceflight program. Total American spacecraft flight hours has now reached more than 100 and 91 hours. Total time in space for all American astronauts since we are now flying with multiple crews is more than 338 hours. We expect to advise Cooper of his new personal record in about 40 minutes as spacecraft Gemini 5 passes over the Rose Knot Victor, our tracking ship located off the east coast, west coast of Peru. This is Gemini Control.

END OF TAPE

This is Gemini Control at 34 hours 32 minutes into the mission. Gemini V spacecraft is now over the Pacific Ocean approaching the Hawaiian tracking station. Activity aboard Gemini V at the present time is in a very low key. Command Pilot Gordon Cooper is in his sleep period and the flight surgeon aboard the Coastal Sentry Quebec tracking ship said data received on the ground just a few minutes ago indicates that Cooper is sleeping soundly at this time. The Hawaiian station reported -- I mean the Coastal Sentry Quebec reported again that pilot Conrad sounds a little hoarse by Dr. Dwayne Catterson, our flight surgeon here in the Mission Control Center said the pilot's condition is excellent and he feels no concern and will make no special moves at this time. This is Gemini Control.

END OF TAPE

This is Gemini Control. We are 35 hours and 32 minutes into our mission. At the present time spacecraft Gemini V is passing over south, central Africa - Africa. We have had no voice communication with the spacecraft crew since we gave you a live-voice communication over the Rose Knot Victor tracking ship quite some time ago. At the present time our spacecraft is in a revolution with apogee of 210 statute miles and a perigee of 103 statute miles. The orbital lifetime is approximately 8 days based on standard atmosphere. Aboard Gemini V spacecraft activity is at low key. According to our flight plan command pilot Gordon Cooper is still in a sleep period. The pilot Pete Conrad is about to perform a hydrogen purge and on the next pass, the next revolution over the RKV, he will give a medical data pass. The revolution period 94 minutes 20 seconds, to complete one revolution of the earth in our present orbital parameters. This is Gemini Control.

END OF TAPE

This is Gemini Control. Spacecraft Gemini V is now 36 hours and 2 minutes into its flight. It is on the 23rd revolution and now is passing over the Pacific Ocean, having just left voice range of the Coastal Sentry Quebec, our tracking ship located just south of Japan. Flight Director Gene Kranz is keeping the spacecraft crew tasks to a minimum so they can get a maximum amount of rest. The only activity slated was a fuel cell purge over the Coastal Sentry Quebec and we lost voice communication before the pilot could report results. The only other activity slated in the upcoming hour or so is a medical pass over the Rose Knot Victor, a tracking ship located off the west coast of Peru. The Coastal Sentry Quebec did report that the spacecraft systems looked normal from the ground readings. This is Gemini Control.

END OF TAPE

This is Gemini Control at 36 hours and 32 minutes into our flight mission. The Gemini 5 spacecraft is approaching the Rose Knot Victor tracking ship located off the West coast of Peru. We are now in our 24th - we are about to begin the 24th revolution of the earth in just a few minutes. Flight surgeon Dr. Duane Catterson reports both flight crew members in top physical condition. He is satisfied with the food and water intake reports that have been made since the flight began, and he anticipates no difficulties at this time from the medical standpoint. The fuel cell oxygen pressure situation aboard Gemini 5 continues to show a slow but a steady improvement. Pressure was up to 91.3 pounds per square inch. This was reported during the last readout made by the Coastal Sentry Quebec tracking ship a few minutes ago. Here in the Mission Control Center there is a relaxed atmosphere as command pilot Gordon Cooper continues in his sleep period, and pilot Pete Conrad has the spacecraft powered down and in drifting flight. The flight controllers are taking advantage of this lull to talk over the mission and also to take a coffee break. This is Gemini Control.

END OF TAPE

This is Gemini Control at 37 hours and 2 minutes into our mission. Spacecraft Gemini V is now on the 24th revolution and is passing over west central Africa. We had voice communication with pilot Pete Conrad as the spacecraft passed over the Rose Knot Victor tracking ship about 10 minutes ago. He reported on the food and water intake for himself and for command pilot Gordon Cooper. He also gave a sleep report. Dr. Catterson, our flight surgeon, indicated great satisfaction with the report and said both men are in good physical shape. Conrad related the suit temperatures had been carried at a low 49 degrees for some time but that he had recently warmed them up a bit. This is Gemini Control.

END OF TAPE

This is Gemini Control after 37 hours and 32 minutes of flight by the Gemini 5 spacecraft. Our flight crew is now passing over the Coastal Sentry Quebec, tracking ship in the Pacific Ocean. It is on its 24th revolution around the earth, and both crew members are awake at this time and soon will be ready to perform the Human Otolith Function experiment. This test is devised to check the astronauts' ability to orient themselves during flight without normal visual assistance. A tester used is a pair of special lightproof goggles. In one eyepiece is a light source in the form of a moveable white line. The astronauts will rotate this line and then position it. A readout scale on the eyepiece then tells them how accurately they were able to place the white line with respect to the horizon. We have voice communication with the Coastal Sentry Quebec at this time and we will attempt to play back the tape of this voice communication as soon as the contact is completed. This is Gemini Control.

END OF TAPE

Houston Cap Com Roger. These are both area 26. However, they are about one rev apart. We changed revs right between the two areas.

Conrad Okay

Houston Cap Com Could I get a rundown from you on the spacecraft systems as you see them now?

Conrad All systems are green. We just took a cabin temperature reading of 72 with a 58 56 percent cabin. It's dry as a bone in here.

That was the taped voice communication between astronaut Buz Aldrin here in Mission Control Center and pilot Pete Conrad aboard the Gemini 5 spacecraft. In our Gemini - NASA news room here in Houston we have been receiving calls from various parts of the United States throughout the evening from people who report that they may have seen Gemini 5 pass over the United States. As a matter of fact, since this white team of controllers came on duty at 2 p.m. this afternoon the Gemini 5 spacecraft has not passed over the United States. It has passed well below the United States throughout this day. This is Gemini Control.

END OF TAPE

This is Gemini Control at 38 hours and 32 minutes into the flight. Spacecraft Gemini 5 is now approaching Kano, Nigeria on its 25th revolution around the earth. About 20 minutes ago, as the spacecraft passed over the Rose Knot Victor, our tracking ship off the west coast of Peru, command pilot Gordon Cooper made a type 1 medical report to that tracking ship. This consists of an oral temperature, a blood pressure check, 30 seconds of exercise with a Bungee cord exerciser followed by a second blood pressure. The flight surgeon on the RKV, or Rose Knot Victor, reported his data good. He asked Cooper if he or pilot Pete Conrad were experiencing any physical discomforts. Cooper gave a negative reply. The Rose Knot Victor reported to Cooper that all the spacecraft systems looked good from that tracking station. Here in the NASA Mission Control Center the blue team of flight controllers has reported for duty. The shift change is due to take place in approximately one-half hour, and the new controllers coming on duty are being briefed on the status of the flight. This is Gemini Control.

END OF TAPE

This is Gemini Control, 39 hours 2 minutes after lift-off. Gemini V spacecraft is now over central China and 1 minute from acquisition by the tracking vessel Coastal Sentry near Okinawa. During the pass over the Coastal Sentry command pilot Cooper is scheduled to conduct a routine purge of the liquid hydrogen and liquid oxygen systems of the section 2 of the fuel cells. Also, a delayed-time playback of a telemetry tape is scheduled during the Coastal Sentry pass. Pilot Conrad is still sleeping at this time. This is Gemini Control.

END OF TAPE

This is Gemini Control, 40 hours 32 minutes after lift-off. Gemini V spacecraft is now over south-central Asia on a track that will carry it over the Philippine Islands. The next station contact will be with the tracking vessel Coastal Sentry 6 minutes from now. While pilot Conrad still sleeps, command pilot Cooper is scheduled to do a cabin lighting survey in the heads-down attitude, that is, with the spacecraft flying inverted. • This is Gemini Control.

END OF TAPE

This is Gemini Control, 41 hours 2 minutes after lift-off. Gemini V spacecraft is now over the south-central Pacific near the end of the 26th revolution and just now going into darkness. The spacecraft will be in contact with the tracking ship Rose Knot in about 15 minutes from this time. Right now it is assumed that pilot Conrad is still asleep. Spacecraft communicator Arda Roy aboard the tracking ship Coastal Sentry reported to flight director John Hodge here in Mission Control that Gemini V looked real good on his telemetry readouts during the pass over that station some 19 minutes ago. This is Gemini Control.

END OF TAPE

This is Gemini Control 41 hours 32 minutes after lift-off. Gemini V spacecraft is now crossing the South American coast just at about the equator. It should be in voice and telemetry contact with the Canary Island tracking station 8 minutes from now. During the pass over the Canaries command pilot Cooper will conduct a purge of the section 1 fuel cell oxygen and hydrogen systems. He will also conduct a routine periodic run of the electrostatic charge experiment in which measurements are made of the electron and ion flux interaction with the spacecraft. This is Gemini Control.

END OF TAPE

This is Gemini Control, 42 hours 2 minutes after lift-off. Gemini V spacecraft is now passing across northern India on a ground track that will carry it over the city of Bangkok, Thailand, and Townsville, Australia. The next command station to be in contact with Gemini V will be the tracking ship Rose Knot 51 minutes from now. We have a tape recording of the pass over the Canary Islands tracking station early in this, the 27th revolution. Let's hear that tape now.

Canary Cap Com Gemini V, this is Canary Cap Com.

Cooper Roger Canary, this is Gemini V.

Canary Cap Com Roger. We are expecting a fuel cell purge from you on section 1 on both hydrogen and oxygen.

Cooper Roger. Section 1, hydrogen and oxygen purge.

Canary Cap Com That's affirmative.

Cooper Roger, stand by one. Garbled.

Canary Cap Com Roger.

Houston Flight How does that purge look?

Canary Cap Com OK. We don't have any indication on it yet. We're doing a bit count at 21 on EAO2 Gemini V, Canary, have you started your purge as yet?

Cooper _____ (garbled) _____ switch on now.

Getting ready to start.

Canary Cap Com Roger

Cooper Actuator (garbled) now. . . hydrogen off.

Reading 91 percent quantity on hydrogen - going to purge oxygen now.

Cap Com Do you copy, Flight?

Houston Flight Roger, Canaries.

Cap Com He's purging now.

Flight Roger

Cap Com Quantity is running roughly 88 percent and pressure is still holding. Roger, Gemini V, it's looking good on your pass.

Cooper Roger. It looks good here. Canaries, did you ever find out from Houston why they wanted us to turn our OAMS heater on?

Cap Com Roger, stand by one.

Cooper Ok.

Cap Com Houston, did you copy?

Flight Say again.

Cap Com He wanted to know why you wanted the OAMS light on

Cooper On account of we still have our RCS heater on. . . . and the warning light on it.

Cap Com He reports the RCS heater light in on due to the warning light on it. Was he requested to turn the OAMS heater off?

Houston Flight Yeah, we turned it off because the temperature is ample and we just wanted to save the power.

Cap Com Ok. Flight advises that the reason for turning the OAMS heater off was that the temperature was ample and they wanted to conserve on power.

Cooper Ok, Flight.

Cooper . . . is off on section 1.

Cap Com Roger. Thank you. Everything still looks good here on the ground.

Flight How's your dump down, Canaries?

Cap Com I've got a flight plan up-date for you.

Cooper Roger.

Cap Com Are you ready to copy?

Cooper Roger, go ahead.

Cap Com Ok. It'll be a UHF pass at 10 hours 39 minutes 40 seconds, sequence number 04. It will be Delta V 5 minutes and 10 seconds. Do you copy?

Cooper Roger. Got that.

Cap Com Ok, we've got about 30 seconds left for pass time here.

Cooper Roger. We got that.

Cap Com Ok, you're looking good.

Cooper That's very good.

Cap Com Flight, we've got 20 seconds to go. You have anything else?

Flight Negative.

Cap Com Rog.

Flight How's he look?

Cap Com Looks real good. Pressure stayed up. We're running for MSC-1. Flight, we just had LOS and we're getting modulation on dump right up until LOS.

Flight Very good.

That was a tape of the Gemini V pass over the Canary Islands tracking station up through loss of signal. This is Gemini Control

END OF TAPE

This is Gemini Control. 42 hours 32 minutes after liftoff. Gemini 5 is now over the south central Pacific east of the Australian city of Brisbane and due north of New Zealand. Gemini 5 is still 21 minutes from contact by the tracking ship Rose Knot. There has been no contact with Gemini 5 since the pass over the Canary Island station earlier this revolution. Gemini 5 has just entered darkness toward the end of the 27th revolution. This is Gemini Control.

END OF TAPE

This is Gemini Control 43 hours 2 minutes after liftoff. Gemini 5 is now crossing the Venezuelan coast at the beginning of the 28th revolution. The spacecraft will be in acquisition by the Antigua tracking and voice remoting station in about 1 minute. Spacecraft communicator here in Mission Control will be able through the voice remoting to talk to the spacecraft. A lighted time playback of telemetry data is scheduled for the Antigua pass. Pilot Conrad is still sleeping, and command pilot Cooper is scheduled to have a meal consisting of chicken and gravy, bacon and egg bites, beef sandwiches, and chocolate pudding. This is Gemini Control.

END OF TAPE

This is Gemini Control 44 hours and 2 minutes after liftoff. Gemini 5 spacecraft is now crossing the east coast of Australia, and has just had loss of signal at the Carnarvon tracking station. Routine plan landing area up-dates for revolutions 30 through 34 were passed up to the spacecraft by the Carnarvon spacecraft communicator Charles R. (Chuck) Lewis. The pilot is scheduled to be awakened shortly and briefed by the command pilot on the status of the spacecraft systems and flight plan activities. During the pass earlier on this 28th revolution over Antigua the command pilot made a food and water usage report; and the Canary Island spacecraft communicator reported the spacecraft looked good on his telemetry readouts. This is Gemini Control.

END OF TAPE

This is Gemini Control, 44 hours 32 minutes after lift-off. Gemini V is now near the end of the 28th revolution and will be within telemetry and voice range of the Eastern Test Range station in about 4 minutes. During this pass tests of the various spacecraft UHF antennas will be made primarily to determine antenna efficiency at low elevation angles. This is also a scheduled meal period for the pilot and a nap period for the command pilot. Canary Island tracking station should acquire the spacecraft 17 minutes from now. A medical data pass is scheduled for the pilot in the Canaries pass. This is Gemini Control.

END OF TAPE

This is Gemini Control, 45 hours and 2 minutes after lift-off.

Gemini V is now over the Libian desert in north Africa about one-fourth of the way into the 29th revolution. The tracking station at Carnarvon, Australia should acquire the spacecraft in 21 minutes. During the Carnarvon pass flight plan up-dates will be passed up to the crew. We now have a tape of the pass of Gemini V over the Grand Turk Island, Antigua, and Bermuda stations. Let's hear that tape now.

Houston Cap Com Gemini V, Gemini V, Houston Cap Com.

Cooper Goodmorning. Gemini V here. Go ahead.

Houston Cap-Com Rog, Gemini V. You're looking good here on the ground. Be advised that there is a medical data pass on the pilot at Canaries with an acquisition time of 10 49 29. Copy?

Cooper Affirmative.

Houston Cap Com And we got a couple questions here for you. Elliot will ask you.

See We are interested in what you might have seen, or whether you saw, D-4 D-7 deflections during the time you had the REP out and were looking at it right after putting it out. We would like to know if you saw a cool IR indications on the OAMS meter.

Cooper Yeah, I think I did, Elliot. It was fairly low and I didn't get to looking at it until rather late in the game. We had a couple of problems when we

put the REP out which we will discuss when we get back.

See

Roger. Then you'd say you think you got some data on it but you don't know just how much.

Cooper

I think we did and I don't know how much.

See

OK. Got one other real quick comment. We're about to lose acquisition here. We think the hydrogen tank is real close to venting so you should see its pressure level off pretty quickly.

Cooper

OK

See

They have a question here for you on the secondary scanner. Did you have a problem with the primary?

Cooper

No, I just put it over there awhile ago to see how it was working and also, we were passing over a great vast amount of clouds coverage, more than we had seen before and it seemed to be firing the thrusters quite a bit so I just took a look at the secondary and left it there.

See

OK. Well, I guess we are about to lose you now.

END OF TAPE

This is Gemini Control 45 hours 32 minutes after liftoff. Gemini 5 is now nearing loss of signal at the Carnarvon Australian tracking station midway through the 29th revolution. The command pilot is scheduled for a nap period at this time. The next station contact will be with the stateside stations starting about 34 minutes from now. We now have a tape recording of a Canary Islands pass earlier in this revolution. Let's hear this tape now.

Canary Cap Com Gemini 5, this is Canary Cap Com. We have a good oral temperature with you, it should be, or would you pump us the blood pressure. Gemini 5, Canary station, you've got the full scale. We have a good blood pressure. Give me a mark when you begin exercise.

Garbled

Canary Cap Com Say it again.

Cooper We're on primary horizon scanner now.

Canary Cap Com Roger. Gemini 5, Canary station, we've got the full scale. We have a good blood pressure; standing by for a water and food report.

Cooper Roger. The command pilot is taking his 2 hour nap period now. The pilot slept about 4 hours and 45 minutes worth a 6 hour period very soundly. And I'll get you the water in just a second. Total water to date on the Command Pilot is 12 pounds, and on the Pilot, 11 pounds 3 ounces.

Canary Cap Com Roger. We'd also like to find out if you have completed the meal A and B of day 1.

Cooper No, we left a fair amount of that and we are into, or jest getting ready to eat, oh, let me see -- just getting day 2 meal Charlie.

Canary Cap Com Roger, Canary Surgeon, out.

Canary Cap Com Gemini V, this is Canary Cap Com. We have about a minute and one-half left in this pass. All systems are go from the ground. We're showing that you have fuel cell H₂ quantity read on.

Cooper Yeah, it's affirmative, standing by to see if it will vent.

Canary Cap Com Roger.

Cooper What do you show on the ground.

Canary Cap Com Roger, we're reading 360 psi on the ground.

Houston Flight Canary, this is Houston Flight.

Cooper Okay, my scale is sitting right at a little below 800.

Canary Cap Com Roger

Cooper About 795.

Houston Flight Canary Cap Com, this is Houston Flight.

Canary Cap Com Go ahead Flight.

Houston Flight We believe that's been venting for the last couple of hours.

Canary Cap Com Flight advises that they agree that it has been venting off and on for the last 3 hours.

Cooper Okay, roger. I can't seem to pick it up on this gauge.

Canary Cap Com Roger.

Canary Cap Com Flight, we have about 20 seconds.

Houston Flight Roger.

Canary Cap Com He's also turned that quantity readoff on.

Canary Cap Com We've has LOS.

Houston Flight Roger.

Canary Cap Com Is there any information that you would like.

Houston Flight No, how did it look, good pulse.

Canary Cap Com Blood real good again.

Houston Flight Okay. Standby.

END OF TAPE

This is Gemini Control, 46 hours, 2 minutes after lift-off. Gemini 5 is approaching the southwest coast of Mexico and will be acquired by the tracking stations of the eastern test range in about 4 minutes for a pass lasting about 13 minutes. During the pass over these stations, Astronaut David Scott, spacecraft communicator here in Mission Control, will pass up to the crew maneuver data for the so-called Phantom Agena rendezvous exercise planned for the next three to four hours of the mission. This is Gemini Control.

END OF TAPE

This is Gemini Control, 46 hours 32 minutes after lift-off. Gemini V spacecraft is now over Central Africa early in the 30th revolution. Here in Mission Control, a handover from the blue team to the red team is underway and each flight controller briefs his relief man on the events of the past 8-hours. We have now a tape recording of the recent State side pass. Let us hear that tape now.

Houston Flight Gemini V, Gemini V, Houston Cap Com.

Cooper Hello Houston Cap Com, Gemini V. Go ahead.

Houston Flight Rog. We have a continuation of your flight plan and it's a lengthy one. It will take us probably about 8 or 10 minutes to read it out. I'll release the key after each update and if you have a question come back at me right then, okay?

Cooper Okay, give it to me by the times, and I'll have to turn the pages too, so take it slow.

Houston Flight Okay, it's sequentially all the way. It includes all your experiments plus the maneuvers for this Phantom rendezvous, copy.

Cooper Rog.

Houston Flight Okay, all set to copy?

Cooper Rog.

Houston Flight Okay, all set to copy?

Cooper Rog. All set to go.

Houston Flight Ah, rog. The first one is a power up for your UHF
no. 1, the time is 13 00 00, and all the times are
for day no. 2. Copy?

Cooper Roger, power up, 13 00 00 for UHF 1.

Houston Flight Roger. D-1, 13 10 00, sequence 02, remarks, Venus.
Speed 30.

Cooper That's D-1, say again the sequence.

Houston Flight 02.

Cooper Okay, 13 00 00 sequence 02, Venus.

Houston Flight Rog. Speed 30.

Cooper Okay.

Houston Flight D-1, 13 20 00, sequence 03. Alpha Centaurus, speed
60.

Cooper Okay.

Houston Flight D-6, 13 41 46; sequence 012; mode, 019; pitch, 30 degrees
down; yaw, 02 degrees right; speed 1000, one thousand,
F-4.

Cooper Roger.

Houston Flight UHF test, 13 47 05; sequence 01; pitch, 20 up; roll,
0; yaw, 14 left.

Cooper Give me that one again please.

Houston Flight Roger. UHF test, 13 47 05; sequence 01; pitch 20 up;
roll, 0; yaw, 14 left.

Cooper Okay.

Houston Flight S-5 and S-6, 14 01 00; during African pass.

Cooper Say the remarks.

Houston Flight That's during the African pass.

Cooper Go ahead.

Houston Flight Okay, backup one on your UHF test, that you just copied, have a delta T of 6 + 42.

Cooper Roger, delta T 6 + 42.

Houston Flight Roger, okay. Next test, D-4, D-7, 14 04 00; sequence 420; over Kano.

Cooper Roger.

Houston Flight S-1, 14 26 12; remarks are sunset time.

Cooper Roger.

Houston Flight Then power up, this is for UHF no. 2, 14 40 00. That's to power up your platform.

Cooper That's the time to power it up, or the time to test?

Houston Flight That is the time to power up the platform.

Cooper Roger.

Houston Flight D-6, 15 16 59; sequence 20; mode 09; pitch 30 down; yaw 09 right.

Cooper Say again the pitch, you faded.

Houston Flight Pitch, 30 down.

Cooper Roger, 30 down.

Houston Flight Speed 60 on that last one.

Cooper Speed 60.

Houston Flight UHF test, 15 21 19; sequence 02; delta T 6 + 43; pitch, 0; roll 139 left; yaw 0.

Cooper Roger.

Houston Flight S-6, 15 45 00; sequence 07. No remarks.

Cooper Roger.

Houston Flight Maneuver, this is a preparation for your maneuvers.
15 50 00. Platform on, cage BEF.

Cooper 15 50 00, platform cage BEF.

Houston Flight That's affirmative. Next on is another maneuver.
16 15 00. Aline BEF, rate gyros on.

Cooper Roger.

Houston Flight Next one is another maneuver preparation. 16 45 00;
computer on; address 25 90 201.

Cooper Roger, computer on address 25 90 201.

Houston Flight That's affirmative. The next on is apogee adjust,
16 50 17; translate forward to zero the IVI's.

Cooper Run me the time again.

Houston Flight 16 50 17.

Cooper Roger, translate forward.

Houston Flight That's affirmative. Next one is D-6. 16 56 49;
sequence 134; mode 09; pitch 30 down; yaw 0 degrees;
speed 125.

Cooper Roger, say again the time.

Houston Flight 16 56 49.

Cooper Okay.

Houston Flight Next one is a maneuver preparation. 17 20 00;
aline platform SEF; computer on; address 25 00 158.

Cooper Okay, maneuver prep, 17 20 00; aline platform SEF;
computer 25 00 158.

Houston Flight That's affirmative. Next is phase adjust, 17 34 58;
translate forward to zero the IVI's.

Cooper What kind of zero was it?

Houston Flight That is your phase adjust.

Cooper Go ahead.

Houston Flight D-4, D-7; 17 42 00; sequence 410 Bravo; and 407.
Over Carnarvon.

Cooper Go ahead.

Houston Flight Another maneuver preparation, 17 50 00, aline plat-
form SEF; computer on; address 27 00 150; yaw 90 left.

Cooper Okay, maneuver prep, 17 50 00, aline platform SEF,
address 27 00 150; yaw left 90.

Houston Flight That's affirmative. The next on is a plane maneuver;
18 06 50; translate forward to zero the IVI's.

Cooper Okay, go ahead.

Houston Flight Okay, we have about 3 more, if I don't get to them,
we'd like to advise you to power up as necessary to
minimize your power usage, and power down in between
the various maneuvers and experiments. We estimate
that your maximum power during the burns will be
about 40 amps and with the platform on only, about
30 amps, and otherwise about 20.

Cooper Okay.

Houston Flight Okay, then you can turn your platform off after each
UHF test, but I think you'll see that in the sequence.

Platform on during all the simulated maneuvers and rendezvous exercises.

Cooper

....

Houston Flight

Gemini V, I think we have LOS, if you copy, we will pick you up over the Canaries.

END OF TAPE

Good morning. This is Gemini Control, 47 hours, 2 minutes into the mission, and we are over Canarvon on the thirtieth revolution. It has been determined that we will attempt the a maneuver adjustment this morning. This is the exercise that Chris Kraft outlined yesterday afternoon, wherein we will assume a Phantom Agena and make four or more maneuvers to catch up with it. These maneuvers are to begin at 32nd perigee, and the first maneuver will be a retro grade 20 foot per second firing maneuver. This will have the effect of adjusting the orbit down to 168 nautical miles in a 90 mile perigee. At the 33rd apogee we plan a posigrade maneuver of 15.8 feet per second which will make another orbital adjustment to 99.1 nautical miles on the perigee, 168.4 on apogee. Then on the, we will do a slight out-of-plane burn in the 33rd perigee, a 15 feet per second burn using aft thrusters, making, I gave an out-of-plane burn followed by a co-elliptic maneuver on the 34th apogee, leaving us with an orbit of 107 nautical perigee and 168.2 apogee. It will bring up the platform to perform these maneuvers. They will be using their incremental velocity indicators onboard setting up the desired feet per second burn on them, and then burning those numbers off the indicators. So we can't give you a percentage time of the duration of the burns right now. Within the last half hour, the Red Flight Team has come into the Control Center. They are all in places now, and at 47 hours and 4 minutes into the mission, that's our status. This is Gemini Control. We do have for you a taped conversation of the Canarvon pass completed about 20 minutes ago, and we are ready to play it for you at this time.

Canary Cap Com

This is .Canary Cap Com.

Cooper

Come in, Canary. This is Gemini 5 here.

Canary Cap Com Roger. We are expecting a purge on section 2, the fuel cell on this pass. We would like to get a quantity read out before we start the purges.

Cooper Roger. The fuel cell O_2 is 93 percent, and about 80 psia.

Houston Flight Canary Cap Com, this is Houston flight.

Cooper Fuel cell hydrogen is 93 percent, the cell is 800 psia.

Houston flight Canary Cap Com, this is Houston flight.

Canary Cap Com Roger, flight.

Houston flight Roger. Before you do that purge, we have some flight plan up-dates we would like to relay through your site.

Canary Cap Com You want to get the flight plan up-dates completed prior to the purge?

Houston flight Roger, no remarks on your line.

Canary Cap Com OK. Go ahead, up-date.

Houston Cap Com Gemini 5, Houston Cap Com. Do you read?

Conrad Go ahead.

Houston Cap Com Roger. We'll pick up where we left off on the maneuvers. Are you ready to copy?

Conrad Yeah. I've got 180650 planning, planning maneuver.

Houston Cap Con Roger. Affirmative. The next one is SAD 13, 182458, sequence 03, pitch 30 down, yaw 08 right.

Conrad Roger.

Houston Cap Com Next is a maneuver preparation, 185000. Align platform SEF, computer on, address 2500164.

Conrad Roger. 185000, align platform SEF, computer on, 2500164.

Houston Cap Com That's affirmative. Next one is reverse co-elliptic,

190418. Translate forward to 0 the IVI's.

Conrad

Roger.

Houston Cap Com

And there's a correction on your UHF test no. 1, which was at 134705. If you'll go back to it, I'll pass you the correction.

Conrad

Go ahead.

Houston Cap Com

It's pitch 90 up, vice 20 up.

Conrad

Roger. Pitch up 90 degrees.

Houston Cap Com

That's affirmative, and did you copy the rest of the instructions relative to keeping the power down and powering off after the UHF test?

Conrad

Yeah. With initial platform power, you wanted 1300. Right?

Houston Cap Com

That's affirmative.

Conrad

OK. We got it. I don't know whether we'll get it all done or not. (Chuckle)

Houston Cap Com

Well, give it a try, and be advised do not use the aft firing thrusters at any time. Copy? Forward firing thrusters.

Conrad

Just the firing thruster?

Houston Cap Com

No, negative. Do not use the forward firing thrusters at any time, forward.

Conrad

Roger. Do not use the forward firing thrusters.

Houston Cap Com

This is because we don't want to use the oxygen in the fuel cell oxygen tank.

Conrad

OK.

Houston Cap Com We don't want to disturb it, and all the thrusting will be done with the aft firing thrusters.

Conrad Roger.

Houston Cap Com OK, and then observe the fuel cell O₂ pressure and don't let it drop much at the high power loads, when you are all powered up and thrusting.

Conrad OK. Canary, stand by for the H₂ purge commencing right now on section 2.

Canary Cap Com Flight, we are not going to be able to get quite all our purge in. We've got a minute and 30 seconds.

Conrad Purge. Go into O₂.

Houston flight Roger. Tell him to go ahead and finish it. It doesn't matter if it's beyond your pass. Tell him to just keep an eye on that pressure drop. Canarys?

Canary Cap Com That's affirmative. Gemini 5, Canary Cap Com. We'll be unable to monitor the end of your purge. We have approximately one minute. Continue your purge to completion, and continue to monitor that pressure.

Conrad We have a minute and 20 seconds to go, and everything looks fine.

Canary Cap Com Roger. Everything looks fine here so far.

This is Gemini Control again. For a re-cap on our weather this morning, the weather bureau is supporting us here in the Gemini Control Center and advises that the weather conditions around the world remain very good for at least two additional days of orbital operations since Typhoon Lucy has

moderated and moved completely out of the west Pacific recovery area. A recovery ship will be available on nearly every revolution during the next 24 hours or more. The west Atlantic landing area between Florida and Bermuda has ideal weather. Scattered clouds, winds, mainly less than 10 knots, and waves of no more than 3 feet will continue into Tuesday morning. In the east Atlantic areas, some 300 miles west of the Canary Islands, clouds will be scattered, and normal trade winds of 15 to 20 knots will raise waves of between 4 to 6 feet. For possible landing areas in the mid-Pacific, about 500 miles north of Honolulu, skies remain partly cloudy, winds have increased somewhat during the last 24 hours, being reported as high as 24 knots. This should give us a maximum during the next 24 hours, raising seas to heights of 5 to 6 feet. The wind in the west Pacific area has decreased to about 15 knots, the sea has subsided to around 4 or 5 feet and will probably decrease even further. Some cloudiness remains, but showers will end during the day. About the only large scale weather phenomenon to be over-flown during the next 24 hours is tropical storm Doreen in the eastern Pacific about 1000 miles south and a little west of San Diego. A whole family of cold fronts have moved up near the 30th parallel of latitude in all three oceans of the southern hemisphere. This is Gemini Control out at 15 minutes after the hour.

END OF TAPE

This is Gemini Control, 47 hours, 19 minutes into the mission. Say again on those rendezvous - that rendezvous maneuver sequence. Four principal maneuvers; the first, a height adjustment; the second, a phasing adjustment; the third, a very slight plane change; and the fourth, a co-elliptic maneuver. We have the recorded conversation between the spacecraft and the Kano ground station ready to play for you at this time.

Cap Com Gemini 5, Gemini 5, this is Houston.

Cooper Go ahead, Houston, this is Gemini 5.

Cap Com Roger. We have a medical data pass over Carnarvan that's going to conflict with a couple of your experiments. It's coming up in just a few minutes. We'd like to have you scrub the medical pass over Carnarvan and we'll do it over Canaries.

Cooper Scrub the medical data pass over Carnarvan.

Cap Com Gemini 5, Gemini 5, this is Houston here. That is correct - scrub the medical data pass over Carnarvan and we will pick it up over Canaries.

Cooper Ok. Can you get a verification on the shutter speed on the D-2 experiment . . .

Cap Com The speed of the D-2 is one 1/25th.

Cooper And what is the . . .

Cap Com Say again.

Cooper What is the lens?

Cap Com Gemini 5, Gemini 5, this is Houston here.

Cooper Go ahead, Houston, Gemini 5.

Cap Com Roger. That is taken with the Questar lens.

END OF TAPE

This is Gemini Control, 47 hours 32 minutes into the mission. In the last 24 hours, each of the men, apparently has slept a total of about 10 hours, that's 10 hours in contrast to the first day's operation when each man slept a total of about 2 hours. Obviously the Flight Surgeons are very happy over this pickup. They indicate, however, the Flight Surgeons indicate that the men still aren't eating quite as much as is expected. They are eating each of the meals, but apparently not all of the meal, so their calorie intake is somewhat down. But doctors are completely satisfied that the men are getting their share of water, however. The fuel cell oxygen reactant supply pressure has climbed to something over 91 pounds. This is a 10 pound increase over this time yesterday which in turn, was a 10 pound increase over that time the day before. So, things are looking up in that department. The climbing pressure is generally attributed to the repeated purges, which is slightly reducing the reactant supply quantity. We are on the 30 th revolution with a pass coming up across the United States and everything is looking very nice. Forty-seven hours 33 minutes into the mission.

END OF TAPE

This is Gemini Control Houston, 48 hours 34 minutes into the mission. Within the last 60 seconds the spacecraft has gotten in touch with the Carnarvon Station. They are in discussion now; they will be discussing the maneuvers that are presently planned for the 32nd, 33rd, and 34th revolution. In the course of the last pass across the United States, Gordon Cooper and Pete Conrad were both awake. We have a visitor here in the Control Center, Mrs. Conrad, was here, and at one point during the pass, the Flight Director/^{said} that Pete Conrad might say "Hello" to his wife. He did, of course, and ask, his only question was, how are the boys doing. Mrs. Conrad, behind the glass here in the viewing area waved back and by lip reading, we understood that she meant to convey to him the word "fine". Jim McDivitt passed this up. The crew then performed a rather intricate UHF test, a test of their various antennas over the Bermuda area. A test wherein they orient the spacecraft antennas directly to the ground and then read them out on the ground station. It is anticipated that at some point in this next hour or hour and one-half, the spacecraft may be given a go for a 47 revolution flight, they have not yet been given that go, when they do, we will break in and advise you. This is Gemini Control at 48 hours 36 minutes into the mission. We have several tapes backed up which we can play for you at this time, beginning with the U.S. pass. Let's have the tape now.

Houston Cap Com Gemini V, Houston here, standing by.

Cooper Roger Houston, Gemini V. We've burned out the sight reticle..... (broken) ... You ought to have a little talk with the flight planning people. Their ceiling is just a little bit too full. We can't get the equipment

put together and torn apart by the time they are putting these things together.

Houston Cap Com Okay, Gordo, I'll take a check on that. Let me ask you one thing, have you tried all the combinations of cords and utility outlets that go along with the sight just in case it's not the sight, but one of the cords instead.

Cooper Roger.

Houston Cap Com Okay, I sort of suspected you had.

Houston Cap Com I think one of the flight planning problems, Gordon, is that we are not blessed with too -- the weather is not too good today, so they are trying to stick them in where they have good weather. I think it's putting a bunch of them together.

Cooper Yeah, well some of these, like on our time, there were just bang, bang, bang, right together. We just can't do them that close together. That's rather poor planning.

Houston Cap Com Okay.

Cooper Yeah, we've got to watch these lens changes, we got every piece of gear in the spacecraft floating around in here trying to keep up with it.

Houston Cap Com Roger, roger.

Houston Cap Com Hey, Pete. Gemini V, Houston here. Why don't you make a few comments for the better sex.

Cooper Hello there. We just passed over Tampeco, Mexico.

Houston Cap Com Pete, Jane's up here. Why don't you say something.

Conrad Hello there. How are the boys doing?

Houston Cap Com She says, "fine".

Conrad That's good. We just passed Monterray which seemed to be under the overcast and I tried to get the area around Tampeco, and I got one quick picture of it.

Houston Cap Com Okay. Say listen, you know you might sort of be thinking about that Lorado pass and what the weather is. If you don't think you can hack that, it looks like you have already gone by that area, but if it looks to cloudy up there, why don't you let us know.

Conrad Okay.

Conrad We may not get this UHF test either because we never did get the platform fully alined before the D-6 run.

Houston Cap Com Okay, understand. You are not going to be able to do the UHF test. Is that correct.

Conrad We'll give it a try here. We are trying to get back back in here and get the platform alined, a little bit anyhow, just so we can do it.

Houston Cap Com Okay.

Houston Cap Com Gemini V, Houston here. I believe if you can't get the platform alined completely, when you get there, just put it in Orbit Rate, and then when you ^{through,} ~~zero~~ come back

down, if you have the horizon scanners on, maybe we can get an idea from what the horizon scanner output is and what the platform angles are, and what the difference between the real angles were and what your indicated ones were.

Conrad We'll throw it in here real quick. We just -- just one second till it gets caged.

Houston Cap Com Rog.

This is Gemini Control again. In that conversation you heard Gordon Cooper advise that the boresight reticle on his side of the spacecraft in his window apparently is no longer operative. This is a standard telescopic sight. It uses a light in a prism affair where the light is reflected and magnified and a series of crosshairs which helps them in the various experiments to sight on various objects. The indication here is that he will probably just make on his window another X mark with his grease pencil or employ some other way to arrange a sighting on his window for the other experiments as we progress through the flight. The reticle has two elements within, he has tried both and neither is operative. We also heard some moderate complaints about the pace of the flight plan. Pete Conrad indicated that there was a lot of gear loose in the spacecraft, a lot of lenses, much activity there, they suggested a general slowing down of the flight plan activities and this will probably be the case. We will not do all of the experiments should we go ahead with these maneuvers. We have been talking with the flight plan back room here in the last few minutes and they generally agreed that during the maneuvering time, we would slow down the pace of some of the camera experiments and the other measurements. Up coming now, we are running with a fairly high power drain. We have

the computer on, the platform is up, the power drain should be well up in the 30 amp area. Over Texas, we are planning a D-6, that is, a land picture taking exercise. And, somewhere between Texas and the Cape, we should reach a decision point on a 47 revolution flight. Now, we have the tape wrapped up on the Canary conservation on this last half orbit, and we will play it for you now.

Canary Cap Com Roger, Gemini V. Would you give us a reading -- quantity reading on the fuel cell H_2 please.

Canary Cap Com We have a good blood pressure, standing by for your water and sleep report.

Conrad Roger, on the sleep we both slept. The pilot slept for about a full 6 hours last night, and the Command Pilot, at the same time, slept for a good 3 hours. Just a moment and I'll read you the water report.

Canary Cap Com Would you switch fuel cell to quantity read to fuel cell H_2 please.

Canary Cap Com Quantity read to ECS O_2 please.

Conrad Roger, and right now, the Command Pilot has drunk 11 pounds of water, the Pilot has drunk 10 pounds 3 ounces.

Canary Surgeon Gemini V, Canary Surgeon, understand, 11 pounds, Command Pilot, 10 pounds 3 ounces Pilot. Is there any indication on the degree of depth of sleep for the Command Pilot.

Cooper Pretty deep.

Canary Surgeon Roger, Canary Surgeon out.

END OF TAPE

This is Gemini Control in Houston, 49 hours, 2 minutes into the mission. We've just completed a Canton Island pass, a swing across the Pacific, and during the course of that pass our Flight Surgeon, Doctor Berry, talked with the command pilot. He wanted to check on the sleep cycle. Cooper reported, "We're both well rested. We slept all last night, got a good night's sleep." Cooper also advised that they were doing some extra exercise in addition to that associated with pulling on the bungee cord during the medical data passes. He didn't elaborate on what type of exercises. He simply affirmed that they were doing additional exercise. Other conversation involved the checking on the radical, which apparently is no longer operative on Gordon Cooper's side of the side of the spacecraft. That is the little prism which is used for sitting and magnifying ground-sited objects. It apparently is no longer functioning. We also queried him about the food intake. However, the transmissions got ragged at that point, and we could not determine exactly how much of the Day 2 rations the crew has eaten. This is Gemini Control out at 4 minutes after the hour.

END OF TAPE

Gemini Control, Houston here; 49 hours, 17 minutes into the mission. Within the past 30 seconds Cap Com Jim McDivitt has passed up the decision of the Flight Director that we are go for at least a 47 revolution flight. I repeat, he has been given a go for a 47 - 1 area and the new values for a landing in that area are being set up by digital command system. The spacecraft is over the southern United States, and we are proceeding according to the, proceeding now to undertake the planned maneuvers coming up in the next revolution. This is Gemini Control out.

END OF TAPE

Gemini Control, Houston here; 49 hours, 32 minutes into the mission. The spacecraft is now out over the central Atlantic. At the conclusion of that last pass, Pete Conrad was going through a series of antenna checks over Bermuda, switching from one antenna to the other, probably using a total of a half a dozen or more. This involved a lot of test counts and that sort of thing, and at the end of that Jim McDivitt, in one of the lighter touches that we've noted during the flight, said that he reminded Conrad that he certainly did like to talk a lot. At this point Conrad came back with, "What would he like him to do, sing a song?" He then promptly launched into a song which went like this, "Over the ocean, over the blue, here's Gemini 5 singing to you." At the conclusion of that brief song, the command pilot advised that Conrad sings slightly off key. We'll be coming up on the first rendezvous maneuver at 10:50 Central Standard Time. Everything is progressing very nicely. This is Gemini Control.

END OF TAPE

This is Gemini Control; 49 hours, 57 minutes into the flight, on the 32nd revolution. The oxygen supply pressure is presently reading, at the last check, 98 pounds, 98 pounds, another rise from the earlier figure quoted to you this morning. The quantity in the fuel oxygen cell supply shows 92.8 percent. We are estimating that we have on board about 270 pounds of maneuvering fuel, as opposed to approximately 360 pounds of take-off, and we're also estimating that the series of maneuvers we will perform in chasing the Phantom Agena today will use another 50 to 60 pounds of fuel, about 25 percent of the onboard supply. This time we have the tape of the latter portion of the State-side, the last State-side pass racked up for you and ready to play for you now.

Houston Cap Com Gemini 5, this is Houston, here. You did not acknowledge this message--be advised you have a go for 47 - 1, and we are sending up the TR's and the retro loads for your computer, so you will be getting some of these yes lights.

Conrad Gemini 5, roger. Waco was under the clouds, so we did look at Dallas, the Dallas airport there.

Houston Cap Com OK. So you did Dallas instead of Waco, right?

Conrad Affirmative.

Houston Cap Com OK. Are you all done? Gemini 5, Houston. Have you completed your pass there?

Conrad Roger.

Houston Cap Com OK. We've got a couple of messages for you. We would like to have you turn your computer off at

this time; just par the computer down.

Conrad Roger. Computer is off.

Houston Cap Com We would like to have you leave your platform on after your UHF test rather than parring it down; we would like to have you leave the platform on throughout the rendezvous, from this point on.

Conrad Check.

Houston Cap Com The roll angle for the UHF test has been changed from 139 to 132. So your new roll angle should be 132, I say again 132 degrees roll left.

Conrad 132 degrees roll left.

Houston Cap Com Roger, and you got your go for 47 - 1, right?

Conrad Roger.

Houston Cap Com OK. You sure do talk a lot.

Conrad Say again.

Houston Cap Com I said you sure do talk a lot.

Conrad What did I say?

Houston Cap Com Shifting antennas.

Conrad What do you want me to do, sing you a song?

Houston Cap Com Think you can?

Cooper He sings off key.

Conrad Over the ocean, over the blue, here's Gemini 5 singing to you.

Houston Cap Com Now, by god, back to talking.

Conrad That's a good deal.

Houston Cap Com Get you a job with the Houston Astros.

END OF TAPE

Gemini Control here, 50 hours 32 minutes into the mission on the 32nd rev. During the last pass there was additional discussion on the amount of food eaten. The crew confirmed they were then in the process of eating meal 2 charlie of the second days ration. This meal consists of orange-grapefruit drink, tuna salad, apricot pudding, toasted bread cubes, and date fruit cake. It's a meal with a total calorie intake of 923 calories. They also indicated they are fine, they are not eating all of the meals. They are just not that hungry and the Surgeon apparently is satisfied with that estimate. This first maneuver burn is presently planned for 50 minutes after the hour, or about 15 minutes from now. It will take place at 32.7 degrees north, 105.3 degrees west, and to occur about 10:50 central standard time. It would be a point out somewhere in West Texas, we would estimate, perhaps in New Mexico. We have the Carnarvon conversation ready to play for you at this time.

Carnarvon Cap Com Gemini V, Carnarvon Cap Com.

Cooper Go ahead Carnarvon, Gemini V.

Carnarvon Cap Com Does the Pilot have the oral temp probe in his mouth for the data pass this trip.

Cooper Coming down now. Blood pressures full scale.

Carnarvon Cap Com Your cuff is full scale.

Carnarvon Surgeon Gemini V, Carnarvon Surgeon, we have a good blood pressure, and we have a good oral temp. Standing by for exercise on your MARK.

Conrad Stand by. MARK.

Carnarvon Surgeon Your cuff is full scale. And we have a good second blood pressure. I assume neither of you have had any

sleep since your last report, but I will take a water update if you have it.

Conrad All right.

Carnarvon Surgeon Gemini V, Carnarvon Surgeon, standing by for your water report.

Conrad Roger. We don't have any further water report since we gave one at MCC.

Carnarvon Surgeon Roger.

Carnarvon Cap Com Gemini V, Carnarvon Cap Com. What is your status for area 47-1.

Conrad Everything still looks good.

Carnarvon Cap Com Roger, you're go on the ground. I'll update your TR clock for a 47-1.

Cooper Just a minute. Carnarvon, are you ready to copy our readouts for the 47-1 go.

Carnarvon Cap Com Roger, go ahead.

Cooper 1A read 7 amps, 1B read 7, 1C read 8, 2A read 6.5, 2B read 6.0, 2C read 6.9. A buss voltage 26 pounds, RCS A pressure 290, temp 70. Ring B, 280, temperature 60, left secondary O₂ 54 00, right secondary O₂ 52 50.

Carnarvon Cap Com Roger, I copied. And that data was read passing the East Coast at about

Houston Flight I want to speak to Surgeon.

Carnarvon Cap Com You said you read that data on the East Coast.

Houston Flight Surgeon

Carnarvon Surgeon Carnarvon Surgeon ...

Conrad I should ... time for that data in just a second.

Carnarvon Cap Com Roger.

Houston Flight How about talking into the -- to both the Pilot and
Command Pilot and getting what the food
how much food they had eaten and what meals they
had.

Conrad That was read at about 15 18 00.

Carnarvon Surgeon Roger, you want how much food and which meals.

Houston Flight Confirm that they had 3 meals on the first day and
what meals they have eaten, and how much they have
eaten out of each one of the meals that they have
had.

Carnarvon Cap Com Roger, I'm transmitting your TR.

Carnarvon Surgeon Roger. You've got it for 47-1.

Conrad We have received it.

Carnarvon Cap Com Gemini V, Carnarvon Cap Com. Stand by for Carnarvon
Surgeon.

Carnarvon Surgeon Gemini V, Carnarvon Surgeon. We are still trying to
get the precise handle on your food consumption.
Would you confirm for us that Command Pilot and Pilot

both had 3 meals on day 1. Over.

Cooper You know the MCC Surgeon just questioned us on it last time over the States and we gave him a complete detailed report. Maybe they haven't gotten the word out yet.

Carnarvon Surgeon Negative. We didn't get it.

Carnarvon Cap Com That's negative, Flight said that they did not get it.

Cooper. Tell him to ask the Surgeon back there.

Carnarvon Cap Com Say again. Gemini V, Carnarvon Cap Com. Gordo, they had trouble receiving through Canton when you were giving that report. They are asking for it again.

Cooper We've had four meals to date. Now we are on meal 2 charlie. We had 2 meals on the first day and 2 yesterday. Now, we are not eating all of it, but we feel fine, but we didn't eat all of it.

Houston Flight Okay, that's very good. That's the information we wanted.

Carnarvon Cap Com Gemini V, Carnarvon Cap Com. We are standing by.

Cooper Roger. Did you get that report on the food.

Carnarvon Cap Com Roger, loud and clear.

END OF TAPE

This is Gemini Control, 50 hours, 46 minutes into the mission, and we are coming up on the first burn, which will be performed in about 10 minutes. The burn duration has been set at 20 seconds. It will be in a retro grade position, we will be reducing the velocity by 21.1 feet per second. Pete Conrad is to give us a mark at the start of the burn and at the end of the burn, and the Guaymas station has been declared the prime for the exercise. They've been in contact for about one minute now; let's tune in live now and see how the burn goes.

Conrad I checked the accelerometer bias here, and I have a little drift, so I am waiting until the last minute and am going to catch up.

Guaymas Cap Com OK. You did catch up now, right?

Conrad Confirmed.

Guaymas Cap Com OK.

This is Gemini Control. The ground voice you are hearing is that of Ed Fendell, the Capsule Communicator at the Guaymas station. Stand by for any additional conversation. The burn should start within this minute.

Conrad 5, 4, 3, 2, 1, burn. Copy?

Guaymas Cap Com OK. I got all that. Give me your IVI read up starting the TM.

Conrad Roger. They are all O's.

Guaymas Cap Com OK. Before and after, alright? What's your attitude hold?

Conrad Right on the money.

Guaymas Cap Com OK. What thrusters did you use?

Conrad The aft firing thrusters.

Guaymas Cap Com OK. Very good. Attitudes look real solid right now on the ground.

Conrad Roger.

Guaymas Cap Com Flight Guaymas, did you copy all that?

Houston Flight Roger.

Houston Cap Com Gemini 5, Houston Cap Com.

Conrad Roger, Houston, Gemini 5. Burn is complete.

Houston Cap Com Roger. Will you read out 80, 81, and 82 for us please?

Conrad Roger. At 80, was 00004.

Houston Cap Com Roger.

Conrad At 81, was 0 and 82 was 0.

Houston Cap Com Roger. Thank you.

Conrad I take that back. 82 was 00007.

Houston Cap Com OK. Four zeros and a seven.

Conrad We're swinging around to 000 and getting ready for the D-6 sequence 134165649. Is that time still good?

Houston Cap Com Roger, but be advised that the target will be slightly down range from the, when we're using those pointing angles that we gave you, and the star will be somewhat behind.

Conrad Roger. We got a real good look at Houston today.

Houston Cap Com Roger. Was it raining down here?

Cooper Yeah. We could see Clear Lake and Taylor Lake.

Houston Cap Com How about the Center? Could you see the Center?

Cooper No, there's a cloud right there some place over you

I think. I can't quite make it out.

Houston Cap Com OK.

Cooper I see a big long white trail of smoke down the center of the bay, though.

Houston Cap Com Roger. Gemini 5, Houston here. We would like to send up your DCS load now for your next maneuver any time you are ready.

Conrad Roger. Do you want to wait one? OK. You can send it up any time.

Houston Cap Com Roger. Understand you are ready now. Gemini 5, Houston here. You didn't answer this transmission, but we sent the DCS load, and we'll give you an up-date based on U. S. tracking over Ascencion. White Sands confirms you maneuver. We've gotten their tracking already.

Conrad Got the ships in sight. We're pitching on now.

Cooper Houston, Gemini 5. We didn't get him. It's pretty hard to

Conrad There he is. There he is.

Cooper But we have a ship wake in sight.

Houston Cap Com OK. Go ahead and do it on that then. The target that you're looking for should have a pair of wakes. He should have the destroyer guard out there with him.

Cooper 91, AOS. Unfortunately, we've got the gun sight

the field of view on the scope and the camera are too small, and I can't find him in it.

Houston Cap Com Roger. I'm sure the water complicates, because one piece of water looks like another piece.

Conrad Yeah. Well it's amazing how well I can see through this crust on our lens, but I can't get it on the track with it because the field of view is too narrow.

Houston Cap Com How about the full-powered telescope, Pete?

Conrad No, the field of view is too narrow on it.

Houston Cap Com OK. Listen, I've got an up-date for you on the time of this burn.

Conradif Gordo could stick it right on him, then I'd have it.

Houston Cap Com Roger. I've got an up-dated time for your next maneuver.

Conrad Say again.

Houston Cap Com I've got an up-dated time for your next maneuver. Are you ready to copy?

Conrad We're ready to copy. Houston, go ahead.

Houston Cap Com OK. 02173435, I say again, 02173435.

Conrad Roger, and you have loaded this into the computer. Is this correct?

Houston Cap Com We have loaded the delta V in the computer. We have to relay the times by voice.

Conrad Roger. I understand that, but you have loaded the maneuver load.

Houston Cap Com Roger. It's been loaded and verified, and we'll

check the U. S. tracking data and give you any further updates that are necessary over Ascencion.

Conrad Roger.

Houston Cap Com Gemini 5, Houston.

Conrad Go ahead, Houston, Gemini 5.

Houston Cap Com We have a section 2 purge at this time also. Will you be able to handle that?

Conrad Over Ascension or right now?

Houston Cap Com Right now.

Conrad OK.

Houston Cap Com Pretty busy, isn't it?

Conrad Fairly. Stand by for hydrogen purge mark.

Houston Cap Com Roger.

Conrad Hydrogen purge complete. Stand by for O₂ purge on my mark. Mark.

This is Gemini Control, 51 hours, 2 minutes after the, from lift-off. The Pilot Pete Conrad just reported that the O₂ purge is complete, and we are out on the edge of the Antigua acquisition area. The burn performed over Mexico and Texas apparently was successful, based on the White Sands radar tracking. It would appear that we brought the apogee down from 207 statute miles down to about 194 statute miles. The perigee remains at 103.9. Shortly after the burn you heard discussions which involved requests for a readout of 80, 81, and 82. Those are computer addresses that are used to check the effect of the burn with the ground data versus the onboard computer data, and a series of zeros and several other numbers were read out. Then as the spacecraft swung east over the Cape

and out over the ocean, the pilots attempted to get a picture of the prime recovery carrier, the Lake Champlain, parked out 5 to 600 miles off the Cape. Apparently, they were not successful in getting a picture through the big Questar lens, and they primarily blamed the loss of the retical on Cooper's side of the window as the reason for not getting it. Say again, the maneuver apparently quite successful in lowering the apogee, and we are continuing now to swing down across the Atlantic. This is Gemini Control out at 51 hours, 4 minutes into the mission.

END OF TAPE

This is Gemini Control, 51 hours 32 minutes into the mission. Just about 2 minutes from now, Gemini V will attempt another maneuver changing burn. This one is to be performed at precisely at 34 minutes 31 seconds after the hour. It will be a posigrade maneuver. They will use the aft firing thrusters. They will be oriented small-end-forward, in zero pitch and zero yaw. They will be trying to achieve a delta velocity, or velocity increment of 15.2 feet per second. The burn will require 20 seconds duration. If successful, it would raise the perigee to 113.5 statute miles, that is an estimate, and it would leave the apogee where it is right now at 194 statute miles. Again, if successful, we would have a new period of 94.9 minutes, that's a revolution period. This burn is to take place at 32.7 degrees south, 63.9 degrees east, which is the apogee point in terms of orbital mechanics. We will not be in contact with the spacecraft during the period of this burn, however, Carnarvon will pick it up about 5 minutes later. We should be able to bring you additional information when Carnarvon acquires. The pressure in the O₂, the fuel cell oxygen source pressure bottle, is, at last reading, 101.3 pounds, which is another increase, steady increase shown throughout today. This is Gemini Control out.

END OF TAPE

This is Gemini Control Houston here, 51 hours 56 minutes into the mission. We have confirmed, based on the Carnarvon contact within the last few minutes that the required burn was performed over the Indian Ocean as scheduled. The burn was performed in the platform mode. The exact delta V achieved was 15.7 instead of 15.2, but, this should put us very close to the 113 mile perigee and 194 mile apogee, and we have no additional correction for you at this time. The -- earlier we heard references to computer address 80, 81, and 82. This is a reference to the addresses in the computer that read out velocity increments in tenths of a foot per second, as opposed to the incremental velocity indicator windows on the left side of the spacecraft which read out the velocity changes in merely feet per second, a more precise check on the burn. Just after the Carnarvon contact, the crew was to perform several deep space exercises with their infrared sensors onboard. They were to look at the Milky Way Constellation, they were also to look at the star Deneb. They found that they could not get a proper setting on the star Deneb without that reticle on the left window, however, they were going ahead and attempting to orient toward the Milky Way. They also showed over Carnarvon, according to ground readouts, that the spacecraft was pulling something over 40 amps, slightly over 40 amps. This is the peak power load that's been on since probably this second revolution, with no apparent degradation to any of the electrical systems. That would have been created by the fact that the computer was on, the platform was up, very likely the cabin lights were up along with,

perhaps another dozen systems. We have the Carnarvon tape wrapped up for you and ready to play at this time.

Carnarvon Cap Com Gemini V, Carnarvon Cap Com.

Conrad Gemini V, go ahead.

Carnarvon Cap Com Roger, would you give me a time of your burn and the readouts for 80, 81, and 82.

Conrad Roger, time of burn was 17 34 31, and that 81 and 82 were zero, but getting them to zero, we wound up with a half-foot more burn, we burned 15.7.

Carnarvon Cap Com Okay, what is 80, 15.7?

Conrad No, 80 was -0005.

Carnarvon Cap Com Roger.

Conrad Okay, the reason for that was we burned in the platform mode to see how well it would do, and it got just a little sloppy, and we got some up, down, left and right in which we had to take out..

Carnarvon Cap Com Roger, I understand.

Conrad Next time I'll put it in rate command.

Carnarvon Cap Com You say next time you would try rate command.

Conrad Yeah, we did that before and that's much better than this platform run.

Carnarvon Cap Com Roger. O. K. I've got enough data for your next maneuver, your next flight change.

Conrad O. K. ready to copy.

Carnarvon Cap Com O. K. Time of burn is 18 hours, 06 minutes, 26 seconds. The Delta V is 14.6 . The time of burn

Delta V is 19 seconds. Pitch 0, yaw -90, aft-thrusters for 25 all zeros, for 26 all zeros, for 27 00146. This is maneuver number 3 now playing.

Do you copy?

Conrad Affirmative.

Carnarvon Cap Com Roger.

Conrad O. K.

Carnarvon Cap Com We have some trouble with your tape dumps. At this time we'd like for you to switch your DC to DC convertor to secondary.

Conrad Roger. DC to DC convertor to secondary.

Carnarvon Cap Com Roger and read it in that position and we'll take a tape dump over the states this pass and evaluate

.....

Conrad Roger. Be advised that at the jump site we are unable to hear the D 4 we will get the D 4 410 bravo. We will get the 407 if we have time.

Carnarvon Cap Com Did you say you would get 410 bravo?

Conrad No, we can't get that one we've been trying with the telescope over here and we haven't been successful. We'll do 407 if possible.

Carnarvon Cap Com Roger. Flight did you copy air to ground?

Houston Flight Roger, we'd like to ask an estimate of how much he used the lateral thrusters.

Carnarvon Cap Com Gemini V. Could you give us an estimate on how much you used the lateral thrusters?

Conrad

Well, we kept one foot down and we were
4 tenths of a foot right.

Carnarvon Cap Com

Roger.

Houston Flight

We copied.

END OF TAPE

This is Gemini Control, 52 hours, 22 minutes into the mission, and out over the Wheeling, at a point 20.4 degrees north, 178.2 degrees east, that would be roughly a thousand miles west of Hawaii, the crew did perform that plane changing maneuver. They changed the plane of their orbit approximately two hundredths of a degree. The time of their burn was reported at 15.4 feet per second, total duration about 19 seconds. They have been in contact with the States now for several minutes, and we expect a quiet pass. They'll pitch down 30 degrees and in the next few minutes will attempt the vision testing experiment, reading out the ground blocks north of Laredo, Texas. Over Hawaii Cooper reported that to date both pilot and command pilot have consumed a total of about 12 pounds of drinking water. We expect a quiet pass this time because of the eye check, and we will come back with anything significant. This is Gemini Control out.

END OF TAPE

This is Gemini Control, Houston, 52 hours, 32 minutes into the mission. During the Laredo eye chart test, the crew, apparently Pete Conrad, could not get a reading from his side. He was to make a reading with his eye tester, and so forth; however, Gordon Cooper reported he could see the squares. He did not attempt to make any read outs. He said he could see the squares and could see the lines inside the squares. Apparently they are having some difficulty in lining up that eye chart out there, because of the lack of land contrast around the lack of sighting points to come up on the exact square targets. Continuing on from there, Conrad reported that the skies are quite clear over the Caribbean in the Gulf of Mexico. He said we are getting an awfully good look at Florida, the Bahamas, and Cuba today. At this time Jim McDivitt, Capsule Communicator here, is still in conversation with the spacecraft which is now down on the far end of the island chain in generally the Antigua area. The next maneuver there to perform will occur some 30 minutes from now at $3\frac{1}{2}$ minutes after the hour. This will be a co-elliptic maneuver. They are to fire their aft firing thrusters to achieve a velocity change of 19.8 feet per second. The duration of their burn will be 25 seconds. They will be pitched down 14.5 degrees and zero degrees in yaw. This burn is to take place at 32.7 degrees south, and 41.6 degrees east. This is Gemini Control at Houston.

END OF TAPE

This is Gemini Control Houston, 52 hours, 43 minutes into the mission. We have a state side pass racked up and ready to play for you now.

Conrad Houston, Gemini V.

Houston Cap Com Go ahead Gemini V, this is Houston here.

Conrad Gordo spotted it but I never did pick it up. The weather was not clear there. and I just couldn't see.

Houston Cap Com O. K. There's still, like I said yesterday, there aren't a lot of contrasting land marks. Did you get any of the readings?

Conrad No.

Houston Cap Com Was that negative?

Conrad That's right, that's negative. We got the spot pinned down, but boy it sure is hard to see.

Cooper You might tell them I could see the figures on the squares. I didn't try to take any readings, I was trying to get the position for Pete to take his readings, but I could see several of the figures quite clearly.

Houston Cap Com Okay.

Cooper You might also tell him it is just like we suspected from the airplane, that they increase and decrease with light angle.

Houston Cap Com Okay, your visibility of the target varied with your light angle, is that correct?

Cooper The figure inside the target.

Houston Cap Com Right.

Houston Cap Com I have some information here for you, Gemini V.

Conrad Roger, go ahead.

Houston Cap Com Okay, be advised that you have approximately 40 pounds of drinking water in your adapter in case you need it. Your fuel cells are working fine, and I've got an update for your reverse coelliptic maneuver here.

Conrad Roger, go ahead.

Houston Cap Com The G.m.t. of burn is 02 19 03 41. That's 02 19 03 41, delta V is 19.8, that's 19.8 with a burn time of 25, burn time of 25 seconds. Your pitch angle is -14.5, that's -14.5, yaw is 0, thrusters are aft. Address 25 is 00 192. That's address 25, 00 192. Address 26 is 000 50. I say address 26 again is 000 50. Address 27 is all zeros. That's all.

Conrad Roger. G.m.t. of burn 02 19 03 41, delta V 19.8, 25 seconds, pitch down 14.5, 00 to yaw, 25, 00 192 26, 000 50, 27, 000 000.

Houston Cap Com Roger.

Conrad We got a real good look at Florida

Houston Cap Com Gemini V, Houston here, say again, you were pretty garbled that time.

Conrad Roger, I say we are getting a good look at Florida and the Bahamas and Cuba today.

Houston Cap Com Roger.

Houston Cap Com Gemini V, also be advised that we'll update this data
I just gave you over Ascension based on U.S. timing.
Conrad Roger.

END OF TAPE

This is Gemini Control, 53 hours 2 minutes into the mission. Two minutes from now our present flight plan calls for the Gemini V spacecraft to perform a 4th maneuver. The 4th maneuver in the last two revolutions. This would occur at an apogee of 32.7 degrees south 41.6 degrees east longitude. The delta velocity hoped for is 17.3 feet per second, and the duration of the burn is to be 22 feet -- excuse, 22 seconds. There will be pitch down 15.8 degrees and use the aft firing thrusters. This should bring that -- have the effect of bringing the perigee up some 6 or 7 miles. At the same we have been advised that the Pilot is to start, well, immediately after this coelliptic maneuver, they will go through a purge of the section 1 side of the fuel cell, hydrogen and oxygen, after that the Pilot is to take a nap, and shortly after that the Command Pilot is to have another meal. We have no tape for you at this time. This is Gemini Control at 53 hours and 3 minutes into the mission,

END OF TAPE

This is Gemini Control Houston, 53 hours 10 minutes into the mission. As we were talking to you on the earlier report. We did establish contact with the spacecraft via Tananarive. The crew was advised to purge both fuel cell sections, not just section one, as had been planned earlier. They will purge both fuel cell sections and then power down the spacecraft. They should have completed their maneuver burns by this time although the communication was so ragged, we couldn't exactly establish whether that had been performed. The next report should come to us some 10 minutes from now when the spacecraft is over Mid-Pacific in the area of Hawaii. We have the Tananarive tape for you and ready to play it for you now.

Houston Flight Gemini V, Gemini V, this is Houston here, over.

Conrad Houston, Gemini V.

Houston Flight Roger, Gemini V, this is Houston here can you give
 us your residuals in 80, 81, and 82?

Conrad 00001. I repeat 00001. is
 00002.

Houston Flight Roger, understand. We got that. I won't bother
 repeating it. Be advised that we want you to turn
 both sections, I say again, both sections right after
 the coelliptic burn and then we want you to get to
 sleep. Over.

Conrad I thought you said to purge both
 sections, is that correct?

Houston Flight Roger. That is affirmative. Purge both sections
 before powerdown. Then we want the pilot to
 get to sleep.

Conrad Roger, purge before powering down. Pilot go to sleep.

Houston Flight Affirmative. Be advised that we're going to slip the sleep periods approximately one hour so that you'll still get the same amount of sleep but just start an hour later.

Conrad (garbled)

Houston Flight Gemini V, Gemini V, Houston here. You're unreadable. We've gotten the important messages across.

END OF TAPE

This is Gemini Control Houston, 53 hours 32 minutes into the mission, and on the basis of this 4th maneuver, we are now estimating a perigee of 124 statute miles, an apogee of 194 statute miles, and a revolution period of about 95 minutes. All three of those values are going to stand an additional check as soon as we get some more data from the last two sites and we will have to confirm them for you a little bit later. We are also assuming at this point, the phantom Agena orbit of 141 statute miles perigee, and 210 statute miles apogee. We have had no communication with the spacecraft since the Tananarive acquisition. We expect Hawaii acquisition in about 5 minutes from now. This is Gemini Control.

END OF TAPE

This is Gemini Control, 10 minutes after the hour. The spacecraft is on a swing down across the Mexican Peninsula. They had some medical data earlier in the pass. We have confirmed earlier the earlier change which occurred back over the Indian Ocean. We have ignition of a minute-man at the Cape. It has lifted off. It's about 3 seconds off the ground and it looks good. We are advised from the Cape that it's a beautiful shot, it's lifting and rising up nicely, and the spacecraft is about 1000 miles to the south. They are looking for it. We will try to keep up -- a running count on how it looks from the Cape. We are on a line with them and it is programing, it is in it's pitch program. Looks good, all the values are right in sinc. No word yet from the spacecraft on whether they are seeing it. Still looks good. Gordon Cooper just came up on the line and said, "We don't see anything down Florida way," but it is a little cloudy from where they are. Plus 90 seconds on the minute-man, but still no report on a sighting in the spacecraft. Plus 100 seconds. On time and on the line is the report from the Cape. Everything still looks good on that minuteman launch, but we have no sighting reported from the spacecraft. Still on time and on the line. As far as we know, this is not one of the planned IR experiments we referred to earlier on missile launchings. It's just an R and D missile launch from the Cape. Standing by for a MARK. We should be coming up on burnout, should we not Houston Recovery. The word on the minuteman, still everything looks good. Report on the minuteman, still everything quite normal. First stage entirely okay. Houston Recovery, would you give us a MARK please on the burnout please, we'd appreciate it. Booster well out of range

by now of the spacecraft which is approximately over Nicaragua, about to begin it's 35th revolution of the earth. We are advised that the second stage of the minuteman has ignited. It's right on the normal values. The first stage burnout occurred on time. We are crossing the 80th parallel at this time, 54 hours and 5 minutes into the mission. We are standing by, Houston Recovery, for a burnout on that second stage. We expect word any second now on burnout on that second stage. The spacecraft itself is well out of range of both our Texas station and our downrange Antigua station. I rather imagine the Antigua station, along with the rest of the island chain is busy tracking that Minuteman. We'll come back to you with the times, as more information occurs on the Minuteman. This is Gemini Control out at 54 hours and 7 minutes into the mission.

END OF TAPE

This is Gemini Control in Houston, 54 hours, 9 minutes into the mission. The Department of Defense advises that all three stages of it are, indeed, minute-man burned on time and on the line, as they put it. We want to emphasize that this particular launch had nothing to do, nothing to do with the Gemini 5 flight, and we really didn't expect the pilots to see it, although they did yaw around and take a look, but they saw nothing. The range on this particular minute-man flight is quoted at about 4000 nautical miles down the eastern test range. It is the ninth straight successful minute-man launch from the Cape. The spacecraft was in contact briefly with our Guaymas and our Texas station. We have the tape racked up and ready to play for you now.

Houston Cap Com Gemini 5, Gemini 5, this is Houston.

Conrad garbled

Houston Cap Com Roger. Would you put your C-band adapter switch to command, please.

Conrad Roger.

Houston Cap Com And Gemini 5, be advised that there is going to be a minute-man launch down at the Cape here in a couple more minutes. I'll get you a time hack on that. See if you can see it.

Conrad Roger.

Houston Cap Com I've got some news for you here. It says here in the headlines of the Houston Post this morning that GT-5 is going to chase an imaginary spacecraft.

Conrad Very good. Did we catch it?

Houston Cap Com Yeah, I guess you did. OK, Gemini 5, we will give
you a mark in 60 seconds and 30 seconds. You might
look out over toward the Cape and see if you can see
anything out that way.

Conrad OK.

Houston Cap Com Sixty seconds now. Gordo, if you are fooling around
at all with that sight, you might give us a call if
and when you get it fixed so that we can plan some
of our experiments for tomorrow.

Cooper OK.

Houston Cap Com Minus 30 seconds. Mark. Fifteen seconds. Can you
see the Cape at all?

Cooper No. Not yet. There's a cloud cover from here.

Houston Cap Com Five seconds. Three, two, they're holding, Gordo.

Cooper OK.

Houston Cap Com Got you excited, didn't we?

Cooper Yeah.

Houston Cap Com Go, they just lifted-off.

Cooper OK.

Houston Cap Com Keep looking. Gemini 5, Houston here. You're looking
very good from the ground. We really don't have
much for you this time.

Cooper OK. Still don't see anything down Florida way.

It's pretty cloudy from here.

Houston Cap Com OK. Say, how's the weather out today? Have you
seen much of the ground?

Cooper Yeah, quite a bit.

Houston Cap Com Say, what do you think about the SAD 13 tomorrow?
 Do you think you have picked up enough knowledge
 about the area to help you find it?

Cooper I think so.

Houston Cap Com OK. Plan on doing it tomorrow such that whoever
 sees it first goes ahead and takes the measurements.

Cooper Got it. I was wearing my landing glasses.

Houston Cap Com Oh, very good, very good. The contacts or the ones
 with the horn rims?

Cooper The big horn rims.

Houston Cap Com OK.

END OF TAPE

This is Gemini Control at 54 hours and 32 minutes into the mission of Gemini 5. At the present time our spacecraft is on its 35th revolution over the earth and is approaching the southern tip of Africa. At this time in the Mission Control Center we are having a shift change. The Red Team of flight controllers, headed by Chris Kraft, will shortly be leaving their consoles to be replaced by the White Team of flight controllers; our flight director for the next eight hours will be Eugene Kranz. Chris Kraft and selected members of his flight controllers' team will be moving over to the NASA News Center in Building 6 at Clear Lake, Texas in just a few moments to have their daily press conference. After the press conference is over, we here in the Mission Control Center will give you a status report on the flight as the White Team of flight controllers takes over. This is Gemini Control.

END OF TAPE

This is Gemini Control at 56 hours and 2 minutes into our flight mission of spacecraft Gemini 5. At the present time the spacecraft Gemini 5 has passed over the South American continent on its 36th revolution around the earth. As it approached South America from the west, Command Pilot Gordon Cooper reported that he had started his Apollo land mark photography. The attempt here is to take pictures of selected landmarks as the spacecraft passes over the ground areas, and these land marks will be used for navigation studies for the navigation system that will be used for the Apollo program. At that time Conrad was programmed for an eating period. Doctor Dwayne Catterson, our flight surgeon here in Mission Control Center, said that from a medical stand point the health of the crew is excellent. They are eating enough food, drinking enough water, and getting enough sleep; and he has no problems as far as the medical program is concerned. Flight status of the spacecraft, all systems are operating in a normal fashion. The oxygen pressure on the fuel cells stands steady at 101.3 pounds per square inch. Mr. John Aaron, our electrical and environmental communications expert, said that they have powered up the spacecraft and have pulled as high as 40 amps from the fuel cells, and the cells are operating, as he put it, beautifully. During the recent pass over the Pacific, the Coastal Sentry Quebec tracking station, tracking ship, updated our spacecraft for continued sea landing areas, reported that all the spacecraft systems looked good from the tracking station, and the weather around the world is also good. This is Gemini Control at 56 hours and 4 minutes into the mission.

END OF TAPE

(first part of tape missing)

now approaching it's start over the Coastal Sentry Quebec, our tracking ship located south of Japan. It is on it's 36th revolution over the earth. We have had no voice contact with the spacecraft since their last pass over the Coastal Sentry Quebec on the 35th revolution. The time in between has been occupied here in Mission Control Center by Flight Director, Eugene Kranz, who has continued to make the very careful check of all systems and all the flight controllers here to get a good handle on the flight and, as the spacecraft moves over the Coastal Sentry Quebec and then over the Hawaiian tracking station, I believe that Flight Director Kranz intends to make voice contact with the crew through that tracking station and will update their flight plan. This is Gemini Control at 56 hours and 33 minutes into the flight.

END OF TAPE

This is Gemini Control at 57 hours and 2 minutes into the flight of spacecraft Gemini 5. The spacecraft has just passed out of voice range of our Hawaiian tracking station on its 36th revolution over the earth. A few minutes earlier it had passed over the Coastal Sentry Quebec. We had voice communication from both stations. Over the Coastal Sentry Quebec the spacecraft map, star-map was updated, and pilot Pete Conrad reported that they had lost the cabin temperature gauge. It was not working, but that they did have a hand temperature gauge. The temperature reading in the spacecraft from the ground was 74 degrees. Over Hawaii command pilot Gordon Cooper gave experiment status checkoff with the Hawaii station and listed all the experiments that the flight crew had been able to accomplish during the last 24 hours. This included 2 medical tests, cabin lighting tests, UHF tests, a series of Department of Defense experiments including visual and photographic exercises. They also photographed a tropical storm and the Apollo landmark experiment which is tied in with the study of navigation for the Apollo spacecraft system. Cooper also reported they had 2 full magazines of terrestrial object photography. At this time the spacecraft is heading for the coast of South America and will shortly pass over the Rose Knot Victor, our tracking ship located off the west coast of Peru. The next transmission will be over the Rose Knot Victor, and we expect to have a further update of our flight plan at that time. This is Gemini Control.

Garbled

CSQ Cap Com

Roger. We have you go on the ground, and I have a map update for you. Are you ready to copy?

Cooper

Roger. Go Ahead

CSQ Cap Com Roger. Map - 22 plus 25 plus 00. Rev 36. Longitude 77 degrees east. Star - 22 plus 25 plus 00, 01 plus 40 plus 16. Did you copy?

Conrad Affirmative.

CSQ Cap Com Roger. And we advise that your ephemeris is now 107.8 by 168.1 nautical miles.

Conrad Say again the ephemeris.

CSQ Cap Com Roger. 107.8 by 168.1 nautical miles.

Conrad Roger. We have one slight discrepancy in that we've lost the cabin temperature gauge. However, we have a hand temperature gauge to use.

CSQ Cap Com Roger. Copied.

Houston Flight Are you getting a reading on the ground out there, CSQ?

CSQ Cap Com Standby. I'm trying to get it now. Gemini 5, CSQ, be advised your cabin heat exchanger outlet air temp is 74 degrees.

Conrad Roger. Thank you. CSQ, Gemini 5.

CSQ Cap Com CSQ. Go ahead.

Conrad What's your position?

CSQ Cap Com Roger. CSQ's position is 21 degrees north, 125 degrees east.

Conrad Roger. You're not in the position you're supposed to be, are you?

CSQ Cap Com Affirmative. That's our assigned position.

Conrad Oh, I see. Did you move for the typhoon a while ago?

CSQ Cap Com The only movement we have is some drift, possibly
20 miles and then back to the OST.

Conrad Roger. So it's 21 north, 125 east. Right?

CSQ Cap Com That's affirmative.

Conrad Thank you.

END OF TAPE

This is Gemini Control at 57 hours and 32 minutes into the flight of spacecraft Gemini 5 which is now passing over the South American continent on the 37th revolution which started just a few minutes ago. Flight director Gene Kranz, upon being informed about 20 to 25 minutes ago that the onboard radar system appeared to be running a little cold - temperature (temperature was something like 16 degrees) - decided that they had better turn it on and put it on a standby position with the switch on to warm it up. And they did this over the Coastal Sentry Quebec tracking ship and left it on throughout the pass over the Pacific, and the Rose Knot Victor tracking ship off the west coast of Peru gave us a temperature reading at that point. The temperature had risen to approximately 26 degrees. It was about a 10 degree rise, and director - flight director, Gene Kranz considers this an adequate temperature.

The Rose Knot Victor reported that all spacecraft systems on the pass over that tracking ship appeared nominal. Their ground radar indicated the flight crew was activating the pitch and yaw thrusters. There was no voice communication with the spacecraft Gemini 5 at that time. This is Gemini Control.

END OF TAPE

This is Gemini Control at 57 hours and 54 minutes into the flight of spacecraft Gemini 5. Here in the Mission Control Center we have a computer problem which occurred at 5:23 c.s.t. Both computers, the mission operations computer and the dynamic standby computer, lost the historical data that had been stored during the past 12 hours. There is no problem here with the dynamic display material. However, the Mission Control Center maintenance and operations personnel are looking into this problem, and they have not yet found a cause. Loss of the historical data will not affect the Gemini 5 mission adversely. It simply means that the staff support personnel will need to calculate trends of flight data manually instead of having constant mechanically computed displays which indicate trends. This type of data is normally logged or stored in the computers for 12 hour periods and then erased from the computer memory. We expect to have more information on the status of these computers in a short while. This is Gemini Control. Spacecraft Gemini 5 is continuing in its 37th revolution over the earth.

END OF TAPE

This is Gemini Control at 58 hours and 2 minutes into the flight of Gemini V. At the present time our spacecraft is coming up over the west coast of India on its 37th revolution over the earth. Here in the Control Center we have no further information on the computer problem. It is still with us. We will keep you advised as soon as a fix is made. To run over that, at 5:23 central standard time, both computers here in the Mission Control Center, the missions operations computer and the dynamics standby computer lost the historical data that was stored in their memory drums during the past 12 hours. This type of information is normally stored for 12 hours and then erased and it is used to indicate trends with the various systems that are used during the flight. The problem does not effect the flight of spacecraft Gemini V adversely. It means that the staff support people will need to calculate trends manually instead of having reference to instant displays. The dynamic displays, however, are still with us; we have lost only that portion that is contained with the historical data. Our spacecraft shortly will be passing over the country of India and out over the Coastal Sentry Quebec tracking ship. We have not had a voice communication with the spacecraft for approximately 40 minutes. We expect that we will have some voice communication over the CSQ or over the Hawaiian tracking station and will update you at that time. This is Gemini Control.

END OF TAPE

This is Gemini Control at 58 hours and 41 minutes into the flight of spacecraft Gemini 5 which is now passing over the Pacific ocean and will be within the voice range of the Rose Knot Victor tracking ship within a few minutes. It is on its 37th revolution over the earth. Here in Mission Control Center our computer problems are clearing up. We had advised that certain data that is stored which gives instant visual, an instant visual look at trends had been lost. Within 11 minutes after loss of the trend data the mission operations computer was back on line, and the operations people had managed to retrieve some 3 hours of this stored data and put it back in the computer. The remaining 3 hours of trend data normally stored in the computers is now also being retrieved from tape material and is going back into the computers. So we now again have the ability to display trend data that comes from data approximately 3 hours old, and we will still retrieve the 3 hours prior to that. The cause of the loss of this trend data has not been pinpointed. But we do expect to soon have full normal trend display capability here in Mission Control. This is Gemini Control.

END OF TAPE

This is Gemini Control at 59 hours and 2 minutes into the flight of spacecraft Gemini 5 which is now passing, has just passed over the southern tip of South America and is on its 38th revolution around the world. During the past few minutes the Gemini 5 spacecraft passed over the Rose Knot Victor, our tracking ship on the west coast, off the west coast of Peru. At that time the Rose Knot Victor gave the spacecraft crew some updated data for possible landing areas and they also gave a go from the ground. The words were: "everything looks great." Here in the Mission Control Center our computer problems are rapidly straightening out. We again have access to the trend display data that is used here by those who need to call up an instant visual to look at trends with the spacecraft systems. And of course all our other displays, the dynamic displays were in operation throughout. We had no problem there. At this time the people who work with the computers are feeding in the data that had dropped out and we expect to be back in complete operation with the visual displays very soon. The Rose Knot Victor tracking ship, in talking to our flight director at Mission Control Center, reported that they have a little bit of weather there, waves of 11 to 12 feet and some high winds. They have been on station now 2 days and 18 hours.

This is Gemini Control.

END OF TAPE

This is Gemini Control 59 hours and 32 minutes into the flight of spacecraft Gemini 5. The spacecraft is now in its 38th revolution over the earth and is just leaving the east coast of Africa. Within a few minutes, 10 - 20 minutes, the spacecraft will be over the Coastal Sentry Quebec, our tracking station south of Japan. At that time we will perform a cabin lighting survey. This is a test with photometer and we read here the increment of light into the spacecraft, in the various portions of the spacecraft proper. Here in Mission Control Center things are in a low key. Some of the flight controllers are taking advantage of this silent period to get a quick sandwich, cup of coffee, discussing the mission, and flight director Gene Kranz is keeping activities somewhat subdued so that the spacecraft crew can get a little rest after a rather busy day that they have had the past 12 to 14 hours. This is Gemini Control.

END OF TAPE

This is Gemini Control at 60 hours and 2 minutes of flight with spacecraft Gemini 5 now passing over the Pacific Ocean almost alongside the Canton Island tracking station. There is no planned voice contact with the spacecraft at this time. Activity aboard the spacecraft has been rather a low key operation. The boys have been engaged in housekeeping activities mainly getting things stowed away aboard the spacecraft that they have used and are not planning to use for the immediate future. According to our flight plan our pilot Pete Conrad will start an eat period shortly, and command pilot Gordon Cooper is scheduled to be in a sleep period. However, he is not asleep and probably will shortly go to sleep. We are making telemetry dumps to various stations along the way. This is data that is fed into the computers on the ground, relayed to them and relayed back here to Mission Control Center. Voice conversation has been held to a minimum. Our flight surgeon, Dr. Duane Catterson, reporting on the medical status of the flight said that both pilots are in excellent condition. He is very pleased with their physical situation at the present time. This is Gemini Control at 60 hours and 3 minutes into our mission.

END OF TAPE

Here in the NASA Mission Control Center our controllers are very relaxed during this period of relative inactivity. The flight appears to have settled down for the long haul. All spacecraft systems are normal and our flight crew is in top physical and mental shape, according to our medical directors. According to flight director Gene Kranz, there is nothing presently apparent to keep this flight from going the full route. We will now give you the live voice transmission as spacecraft Gemini V passes over the Rose Knot Victor tracking ship. We should have acquisition very shortly within a matter of a moment or so. At the present time aboard the spacecraft command pilot Gordon Cooper is in a sleep period and our pilot Pete Conrad should be eating, according to the flight schedule.

Conrad Roger. (garbled)

RKV Cap Com Say again, Gemini V.

Conrad Here is the ECS quantities involved and I'll go through these ECS quantities involved and the fuel cell O₂.

RKV Cap Com Roger, standing by.

Conrad Roger. The onboard reading is 88. Garbled

RKV Cap Com I copy

Conrad Fuel Cell O₂ is ___ percent _____ psia
Garbled

RKV Cap Com Roger, I copy. You have a go on all systems from the ground.

Conrad Roger. We are go up here. Be advised that (noise)

RKV Cap Com Roger, I understand. We have a map update for you.
Acknowledge when you are ready to copy.

Conrad Roger. Let me put down so I can use my other
hand. . . . Go ahead. Ready to copy.

RKV Cap Com Roger. Map at 02 53 07, longitude 8 degrees east,
rev 39

Conrad Roger, map 02 53 07, 8 degrees east, rev 39.

RKV Cap Com Roger. Star 02 53 07 01 33 03

Conrad Roger. 01 33 03

RKV Cap Com Roger. Be advised you have a fuel cell purge over
Kano. I'll give you the time. 02 50 00.

Conrad Roger, 02 50 00, purge the fuel cells and purge both
of them.

RKV Cap Com Roger, sections 1 and 2.

Conrad How's the weather down there?

RKV We just got an advisory that gives us _____
2 or 3 feet. Feels more like 10 or 12 feet from
inside this ship.

Conrad Roger. You might pass on to Houston that there are
two very very large cloud areas out over the Pacific.
We passed over both on the last 2 revs and it really
bothers the horizon scanners

RKV Cap Com I understand. Your horizon scanners are effected
by this large cloud coverage over the Pacific

Conrad That is correct.

RKV Cap Com How's the spaghetti and meat balls?
Conrad Very good. I never thought cold spaghetti and meat
 balls could taste this good but it sure does.
RKV Cap Com Real Italian style.
Houston Flight RKV Cap Com, Houston Flight
RKV Cap Com Go ahead, Houston Flight.
Houston Flight Roger, how's your tape dump going?
RKV Cap Com My tape dump is coming along fine.
Houston Flight Roger. You get your TX in?
RKV Cap Com That's affirmative. TX in.
Houston Flight OK.

That was the live voice communication between spacecraft Gemini V
and our tracking ship the Rose Knot Victor. This is Gemini Control.

END OF TAPE

This is Gemini Control. We are now 61 hours and 2 minutes into our flight Mission. Spacecraft Gemini 5 is crossing the northeast portion of the African continent on its 39th revolution over the earth. We have had no voice communication with the spacecraft since our last conversation when it was over the Rose Knot Victor tracking ship off the west coast of Peru. Command pilot Gordon Cooper is still programmed in his sleep period. In the NASA Mission Control Center we have some additional information on the computer problem we discussed earlier this evening. The computer loss of trend or historical data that we reported on has been traced to an operator error by the entry of incorrect data into the computers. This caused the computer programs to halt during processing. The entry which was attempted is performed only during periods of low mission activity. There was no malfunction of the computing equipment or of the computer program. I'd like to repeat that. There was no malfunction of the computing equipment or of the computer program. The history and trend data was reestablished in the computers some time ago by replaying the previously recorded data. Everything is operating and has been at normal here at Mission Control Center. This is Gemini Control.

END OF TAPE

This is Gemini Control at 61 hours and 32 minutes into our flight mission. The Gemini 5 spacecraft at the present time is passing over the Pacific Ocean nearing the Canton Island tracking station. Everything aboard the spacecraft is in a normal condition. We had a pass over the Coastal Sentry Quebec just a few minutes ago and the Coastal Sentry Quebec gave the spacecraft a go from the ground. Pete Conrad reported he had purged the fuel cells, and at this time we will give you a tape playback of that voice communication between the Coastal Sentry Quebec tracking station and the Gemini 5 spacecraft.

Houston Flight CSQ Cap Com, Houston Flight.

CSQ Cap Com CSQ Cap Com

Houston Flight Roger. You could advise the crew that we'll give them their systems update briefing, their spacecraft systems briefing, over Canton on this rev; and I'll standby and I'll give you time from now. It's about 13 minutes from now.

CSQ Cap Com 13 minutes from now. Roger. Gemini 5, CSQ.

Conrad Go ahead, CSQ.

CSQ Cap Com Roger. Houston advises they'll give you a systems update over Canton approximately 13 minutes from now.

Conrad Roger. Understand systems update over Canton 13 minutes from now. Thank you sir.

That was the live voice communication, or tape voice communication, between spacecraft Gemini 5 and the Coastal Sentry Quebec tracking ship. This is Gemini Control at 61 hours and 34 hours into the mission.

END OF TAPE

This is Gemini Control at 62 hours and 2 minutes into the flight of spacecraft Gemini V, which at the present moment is just about ending its 39th revolution and will shortly be picking up on its 40th revolution over the earth. At the present time we have voice communication between the Rose Knot Victor, our tracking ship, and the Gemini V spacecraft, and at this time the spacecraft communicator aboard the Rose Knot Victor is updating the tracking tasks that will be accomplished by the flight crew from now through the rest of their flight tonight and tomorrow. A few moments ago - a few minutes ago, rather, as the spacecraft passed over the Canton Island tracking station, the Houston spacecraft communicator, Buzz Aldrin, briefed the crew on their spacecraft systems as seen on ground readouts, and at this time we will play back for you the taped voice communication between the Canton Island tracking station, remote voice of the Houston spacecraft communicator through Canton to the spacecraft.

Houston Cap Com Gemini V, Gemini V, this is Houston. I do not receive you. I'd like to give you a status report on your systems. Over.

Houston Cap Com Gemini V, I still do not read you. Your status report is as follows: Your fuel cells seem to be adequately replacing your water consumption. Tank A quantity is 46 pounds. The fuel cells seem to be doing real well. There is no significant degradation in either of them. At present

there is no real concern now for either the H₂
or the water pressure limiting your duration.

We show your cabin temperature holding at
70 to 71 degrees. How do you read, Gemini?

Cooper

Garbled.

Houston Cap Com

Gemini V, this is Houston. Say again.

Cooper

garbled

Houston Cap Com

Roger, we show your consumables are quite close to
the predicted values. Your fuel cell H₂ is expected
to vent for approximately 80 more hours. We have
your coolant temperatures holding steady with the
radiator outlet temperature varying from 20 degrees
on the day side to 0 degrees on the night side.
Your G and C systems all seem to be doing quite
well. Your fuel remaining is 79 pounds. The
oxidizer remaining is 139 pounds. With your
projected experiments, we project them to require
59 pounds of fuel, leaving a pad of 20 pounds.
Your radar average temperature dropped to 19 degrees
over the RKV on the 35th rev. This is the reason
we asked you to bring the radar to standby. Your
temperature is presently 36 degrees. Over.

Cooper

Roger, 36 degrees on radar.

Houston Cap Com

Roger. On your phantom Agena rendezvous today,
the results were quite encouraging. We had your

perigee within 2 nautical miles of being coelliptic, and your .2 of a nautical mile, and your apogee within .3 of a nautical mile. This would have given about a 2-minute difference in initiation time for terminal phase. Many of your experiments tomorrow are going to depend on how well we can get the reticle fixed. How do you seem to be doing on that now?

Cooper

I'm getting ready to work on it now.

Houston Cap Com

Okeydoke. We've been taking a couple of them apart here to see what you might - what problems you might have. We'd like to conduct some radar tests tomorrow. The ones we did day before yesterday were quite encouraging. In these tests we'll be doing three different types of rendezvous tests, or radar tests, and two tests involving the IMU and the scanners. Could you tell us whether either during the REP exercise or during the pass over the Cape you observed your FDI needles to be centering as you were tracking either the REP or the Cape?

Over..

Cooper

Yes they were, Elliot.

Houston Cap Com

This wasn't confirmed by our summaries on the ground. We're also considering some rendezvous terminal phase visibility tests starting about

20 minutes prior to assimulated initiation burn and
carrying on through to the breaking point. We'd
like -

Cooper Garbled

Houston Cap Com Say again. . . . Gemini V, Houston, say again.

Cooper we do not read Houston any more.

Unknown Roger, Gemini V.

Houston Cap Com Gemini V, how do you read Houston now?

Cooper I can read you again.

Houston Cap Com Roger. We'd like to do some of these tests, power
permitting, during your non-stateside passes. If
you have any comment on whether you care to be
occupied while one person is sleeping we'd be
willing to help.

Cooper I think we've been kept fairly busy. It hasn't
been too bad so far.

Houston Cap Com Roger. This would be while one crew member is
sleeping and the other one is sitting by.

Cooper Roger. Some of these things will probably wake the
other man up.

Houston Cap Com Understand.

END OF TAPE

This is Gemini Control at 62 hours and 34 minutes into the flight of Gemini 5 which is now passing over the southeast part of the continent of Africa. We had a recent status review over Canton island and the spacecraft and the flight crew are in a go condition. In the Mission Control Center everything is operating normally. The blue team of flight controllers have reported in and are about ready to take over direction of this flight. At the present time they are receiving their routine briefing prior to assuming command. As our flight director, Gene Kranz, commented earlier, there is nothing apparent at this time to prevent this flight from going the full route. This is Gemini Control at 62 hours and 34 minutes into the mission with our spacecraft on revolution 40.

END OF TAPE

This is Gemini Control, 63 hours, 2 minutes after lift-off. Gemini 5 just completed a pass over the tracking ship Coastal Sentry stationed near Okinawa, midway through the 40th revolution. During the pass over the Coastal Sentry a medical data check was run on the command pilot, Cooper. He also made a food and water usage report. A delayed time telemetry tape was dumped to the ship during this pass and a cabin lighting survey with the spacecraft in the upright position was also scheduled. Spacecraft Communicator aboard the Coastal Sentry said Gemini 5 was Go on the ground. Pilot Conrad is asleep at the present time. This is Gemini Control.

END OF TAPE

This is Gemini Control, 64 hours 32 minutes after lift-off. Gemini V spacecraft now is over the southwest Pacific, just south of the Philippine Islands, midway through the 41st revolution. During the pass over the tracking ship Rose Knot at the end of the 40th revolution, command pilot Cooper reported that he had successfully repaired the spacecraft reticle. Many of the various tracking tasks and experiments are dependent upon the reticle for alining the spacecraft toward ground objects. The reticle is foresighted along the longitudinal axis of the spacecraft. This is Gemini Control.

END OF TAPE

This is Gemini Control, 65 hours 2 minutes after lift-off. Gemini V is now over the southeast Pacific toward the end of the 41st revolution and will be in voice and telemetry contact with the tracking ship Rose Knot 6 minutes from now. Pilot Conrad is still sleeping at this time. There have been no changes in the status of the spacecraft crew or on its systems during the past hour. If the Gemini mission runs full 8 days, retrofire will occur next Sunday morning at approximately 7:29 central standard time. This is Gemini Control

END OF TAPE

This is Gemini Control, 65 hours 32 minutes after lift-off.

Gemini V at this moment is in telemetry and voice contact with the Canary Island tracking station, and will cross the African coast shortly on a track passing over the Sahara Desert and along the southern shore of the Mediterranean toward the end of the 41st revolution. Gemini V passed over the tracking ship Rose Knot for the last time until the 50th revolution. We now have a brief tape of the voice communication between Gemini V and Rose Knot. Let's hear that tape now.

RKV Cap Com Gemini V, RKV Cap Com.

Cooper Roger RKV Cap Com, Gemini V.

RKV Cap Com Roger. We would like to verify the position of your fuel cell heater and O₂ heater circuit breaker. We would like for it to be open.

Cooper Roger. Fuel cell _____ heaters are all open.

RKV Cap Com I'm referring to the heater circuit breaker on the pilot's circuit breaker panel

Cooper _____ heater circuit breaker. That's all?

RKV Cap Com Roger, thank you. They were wanting to make sure that we didn't vent anymore of the H₂ overboard than we had to. Everything looks real good here on the ground,

Cooper Gemini V. Everything looks good up here.

RKV Cap Com Roger.

END OF TAPE

This is Gemini Control, 66 hours 2 minutes after lift-off.. Gemini 5 is now crossing the Bay of Bengal, east of India, midway through the 42nd revolution. At the present time command pilot Cooper is scheduled to conduct measurements of the spacecraft's electrostatic charge potential, experiment MSC-1. Pilot Conrad is still asleep. This revolution will be one of the quietest of the entire mission for there is a gap of 1 hour 10 minutes between the Canary Islands pass earlier in this revolution and acquisition by the stations of the Eastern Test Range at the beginning of the 43rd revolution. This is Gemini Control.

END OF TAPE

This is Gemini Control, 66 hours 32 minutes after lift-off. Gemini V is now over the south-central Pacific toward the end of the 42nd revolution. There has not been any voice, radar, or telemetry contact with the spacecraft during the past half-hour. The next station to contact Gemini V will be the Antigua station in the Eastern Test Range. While pilot Conrad presumably is still asleep, the flight plan calls for the command pilot Cooper to be eating at this time. This is Gemini Control.

END OF TAPE

This is Gemini Control, 67 hours, 2 minutes after lift-off.

Gemini V is now over the mid-central Atlantic at the beginning of the 43rd revolution. During the just-completed pass over the stations of the Eastern Test Range, command pilot Cooper completed a purge of the fuel cell oxygen and hydrogen system. Cooper also described how he repaired the spacecraft reticle. We now have a tape of this pass. Let's listen to the tape now.

Antigua Cap Com Could you give us a little description how you repaired your reticle, please.

Cooper Rog. I took it all apart and completely dismantled it and was installing the aux receptacle line inside when I discovered that the aux receptacle, when the cord was pulled out to the fairly full extent, it shorted out. And further I discovered it was my aux receptacle cord and not the reticle.

Antigua Cap Com Rog. Understand. Very good. You've started a new concept--in inflight maintenance down here.

Cooper Rog. So then I went back to it and I put the thing all back together again and put another aux receptacle on it and it works fine.

Antigua Cap Com OK, very good. We're interested in that and that really saves us quite a bit on the experiments.

END OF TAPE